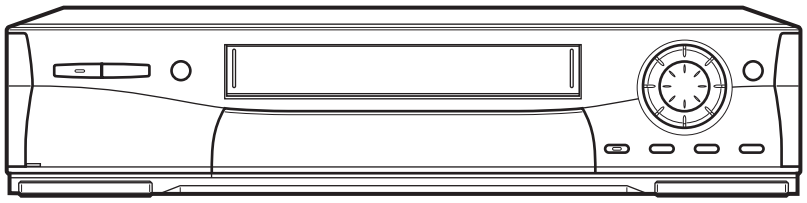
2002

MITSUBISHI

Service Manual

VIDEO CASSETTE RECORDER



D-VHS MTP NTSC

VHS

MODEL

HS-HD1100U

Only cassettes marked D-VHS or VHS can be used with this video cassette recorder.

SPECIFICATIONS

Tape Format	:	VHS NTSC standard with Hi-Fi audio and D-VHS standard
Power Source	:	120 V AC ; 60 Hz
Power Consumption	:	Approx. 25 W (standby 6.0 W)
Video Signal System	:	EIA standard ; NTSC color
Video Recording System	:	VHS standard/D-VHS standard
Luminance	:	Frequency modulation recording
Color Signal	:	Low frequency conversion sub-carrier phase shift recording
Hi-Fi Audio Recording System	:	VHS standard Azimuth helical scanning system
Linear Audio Track	:	1 track
Maximum Recording Time		
D-VHS	:	150 min. with DF-300 video cassette (HS) 300 min. with DF-300 video cassette (STD)
VHS	:	120 min. with T-120 video cassette (SP) 360 min. with T-120 video cassette (EP)
Record/Playback System		
Video	:	4 heads
Audio	:	2 Hi-Fi channels and 1 monoral audio control
Digital	:	HS 4 heads STD 2 heads
Rewind Time	:	Approx. 43 seconds for T-120 cassette

Video Input	:	0.5 to 2.0 V(p-p), 75 Ω unbalanced RCA pin Jack
Audio Input	:	346 mV(rms), 47 kΩ unbalanced RCA pin Jack
Video Output	:	1.0 V(p-p), 75 Ω unbalanced RCA pin Jack
Audio Output	:	346 mV(rms), 1 kΩ unbalanced RCA pin Jack
Digital Interface Input/Output	:	based on IEEE 1394 digital interface, 4 pin, corresponds to S400
Tuner VHF	:	54 to 88 MHz, 174 to 216 MHz
UHF	:	470 to 806 MHz
CATV	:	54 to 88 MHz, 90 to 804 MHz
Operating Temperature	:	41 °F to 104 °F
Relative Humidity	:	30 % to 80 %
RF Channel Output	:	Channel 3 or 4 switchable
Weight	:	Approx. 9.5 lbs (4.3 kg)
Dimensions	:	16.7”(W) × 3.7”(H) × 12.0”(D)
Timer Program Capacity	:	1 month programmable / 16 programs
Memory Backup Time	:	Approx. 30 minutes
Deck	:	α Deck

• Weight and dimensions shown are approximate.
• Design and specifications are subject to change without notice.

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.

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GLOSSARY OF ABBREVIATIONS

A/C : Audio/Control
A-PB : Audio Play Back
A-REC : Audio Recording
AE : Audio Erase
AENV : Audio Envelope
AFC : Automatic Frequency Control
AFF : Audio Flip Flop
AFTV : Auto Fine Tuning Voltage
ALC : Automatic Level Control
AMODE : Audio Mode
AMPC : Amplifier Alternating Current Ground
APC : Automatic Phase Control
ATFN : Auto Fine
ATT : Attenuator

BLMUTE : Blue Back Mute

C/N : Carrier/Noise Ratio
CCD : Charge Coupled Device
CG-CS : Character Generator-Chip Slect
CHSW : Channel Switch
CLKSEL : Clock Select
CNTR : Counter
COM : Comparator
CONV SW : Converter Switch
CP-FG : Capstan-Frequency Generator
CP-REV : Capstan-Reverse
CPMOTORV : Capstan Motor Voltage
CROT : Chroma Rotation
CSYNC : Composite Synchronizing Signal
CTL : Control

D.E. : Detail Enhancer
D-FF : Drum Flip Flop
DEMOD : Demodulator
DET : Detector
DLY : Delay
DOC : Drop Out Compensator
DOCSTOP : Drop Out Control Stop
DR-FG : Drum-Frequency Generator
DR-OUT : Drum Control Out
DR-PG : Drum-Phase Generator

EE : Electronic-Electronic
EMPH : Emphasis
EP : Extended Play
EQ : Equalizer
ES : End Sensor

FBC : Feed Back Clamp
FE : Full Erase
FF : Fast Forward
FG : Frequency Generator
FLDCS : Fluorescent Tube Driver Chip Slect
FM : Frequency Modulation
FSC : Frequency of Color Subcarrier

G : Ground

HASW : Head Amplifier Switch
HFR400 : Hi-Fast Forward/Rewind 400
HFRSS : Hi-Fast Forward/Reverse Speed Search
HSYNC : Horizontal Synchronizing Signal

I-LIMIT : I(Current)-Limitter

JSTCLK : Just Clock

LIN-IN : Linear Audio In
LIN-OUT : Linear Audio Out
LMUTE : Linear Mute
LP : Long Play

MOD : Modulator
MOTORV : Motor Voltage

NL : Non Linear

OSC : Oscillator

PB : Play Back
PC : Position Control
PCB : Printed Circuit Board
PG : Pulse Generator
PLL : Phase Locked Loop
PRT : Protect
PSAVE : Power Save
PSLED : Power Save Light Emitting Diode
PSYNC : Pretened Vartical Synchronizing Signal
PWSV : Power Save
PWV : ON/OFF Command to supply B + Power

QH : Cue Horizontal Signal
QV : Cue Vertical Signal

REC : Recording
REC2 : Record Command for the PB/REC Control Circuit
RECPBC : Record/Play Back Chroma Signal
RES : Reset
RESPCM : Reset Pulse Code Modulation
REW : Rewind
RIS : Record Inhibit Switch
RMSDET : Root Mean Square Detector
RXD : Read X Data

SAPIND : SAP carrier detect Indicator
SCLK : Serial Clock
SCR : Scramble
SI : Serial control data Input
SLD : Side Lock Detector
SP : Standard Play
SS : Start Sensor
SSVSYNC : Speed Search Vertical Synchronizing Signal
STRB : Strobe
SU-SENS : Supply Reel Sensor

TSREC : Tape Simulate Recording
TSSW : Tape Simulator Switch
TU-SENS : Take Up Reel Sensor

V-REF : Voltage Referrence
VBUSY : VSET Busy
VCA : Voltage Control Amplifier
VCO : Voltage Controlled Oscillator
VENV : Video Envelope
VSETCLK : VSET Clock
VSETCS : VSET Chip Select

YNR : Y(Luminance) Signal Noise Reduction

SAFETY PRECAUTIONS

INTRODUCTION

This manual provides service information for the adjustments of mechanical and electrical operations.
Due to design modifications, the servicing procedures and data given in this manual are subject to possible change without prior notice.

WARNING : Many of the programs broadcast by television stations are protected by copyright and Federal law imposes strict penalties for copyright infringement. Some motion picture companies have taken the position that home recording for noncommercial purposes is an infringement of their copyrights. Until the courts have ruled on the proper interpretation of the law as applied to home video recording, this equipment, if used to record copyrighted material, should be operated at the user's own risk.

WARNING :
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
This video cassette recorder should be used with AC 120V, 60Hz only.

SAFETY NOTICE

Before returning VCR to the customer a safety check of the entire VCR should be made. The service technician must be sure that no protective device built into the instrument by the manufacturer has become defective or inadvertently damaged during servicing. Observe all caution and safety related notes located on or inside the VCR cabinet.
WARNING : Alterations of the design or circuitry of this VCR should not be made. Any design alterations or additions, such as circuit modifications, auxiliary speaker jacks, switches, grounding, active or passive circuitry, etc., or use of unauthorized camera, cables, accessories, etc. may alter the safety characteristics of this VCR and potentially create a hazardous situation for the user. Any design alterations or unauthorized additions will invalidate the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting from them. Do not lubricate any motors. When reassembling the VCR, always be certain that all the protective devices are put back in place, such as non-metallic control knobs, shield plates, etc. When service is required, observe the original lead dress. Components that show evidence of overheating or other electrical or mechanical damage should be replaced.

WARNING : **Replace with same type 1.6A, 125V FUSE.**

LEAKAGE CURRENT CHECK

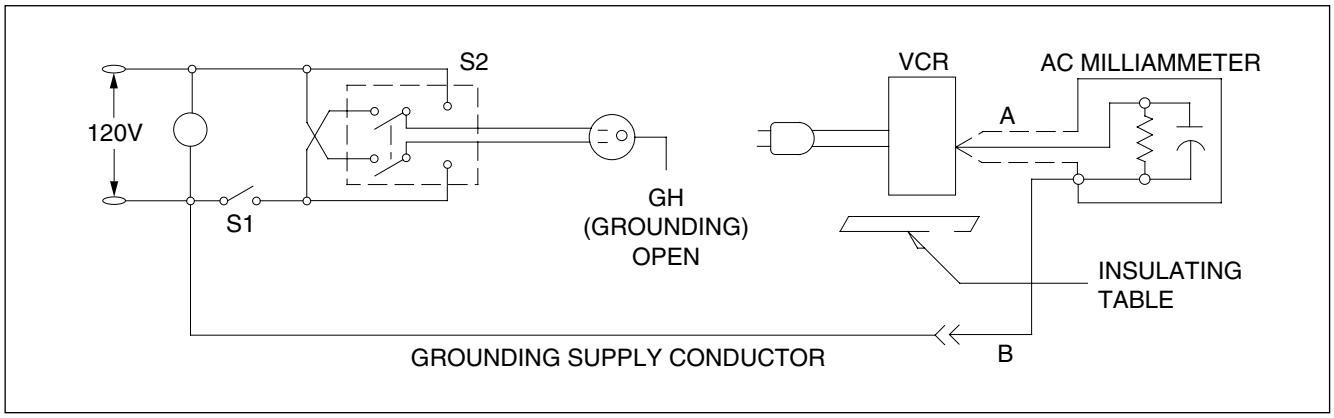
Before returning the VCR to the customer, it is recommended the leakage current be measured by the following methods.

1. Cold Check
   With the AC plug removed from the 120V AC source, place a jumper across the two AC plug prongs. Turn the AC switch on. Using an ohmmeter, connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (metal cabinet, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 1 MΩ. Any resistance below this value indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

2. Hot Check
The test sequence, with reference to the measuring circuit in the figure is as follows:

(1) With switch S1 open, connect the VCR to the measuring circuit. Immediately after connection, measure the leakage current using both positions of switch S2 and with the switching devices in the VCR in all of their operating positions.

(2) Close switch S1, energizing the VCR, and immediately after closing the switch, measure leakage current using both positions of switch S2, and with the switching devices in the VCR in all of their operating positions. Repeat the current measurements of items (1) and (2) after the VCR has reached thermal stabilization. The leakage current should not be more than 0.5 mA.



AC Leakage Test

Avoid shock hazards. Do not connect this VCR to a TV antenna, cable or accessory that exhibits excessive leakage currents. If available, the television instrument or cable to which this VCR is connected should have the antenna cold check and leakage current hot check performed.

PRECAUTIONS

Handling and storage

- Avoid using the VCR in the following places:
  - extremely hot, cold or humid places,
  - dusty places,
  - near appliances generating strong magnetic fields,
  - places subject to vibration,
  - poorly ventilated areas.
- Be careful of moisture condensation.
- If you pour a cold liquid into a glass, water vapor in the air will condense on the surface of the glass. This is called moisture condensation.
- Moisture condensation on the head drum, one of the most critical parts of the VCR, will cause damage to the tape.
- The VCR is equipped with a moisture condensation prevention circuit. This circuit operates only when the unit is attached to an AC outlet.
- Handle the VCR carefully.
- Do not block the ventilation openings.
- Do not place anything heavy on the recorder.
- Do not place liquids on the top cover of the recorder.
- Use the Recorder in horizontal (flat) position only.
- Avoid violent shocks to the recorder during packing and transportation.
- Before packing, be sure to remove the cassette from the recorder.

CONNECTION

Connecting separate antennas (UHF/VHF)

Connecting the Television

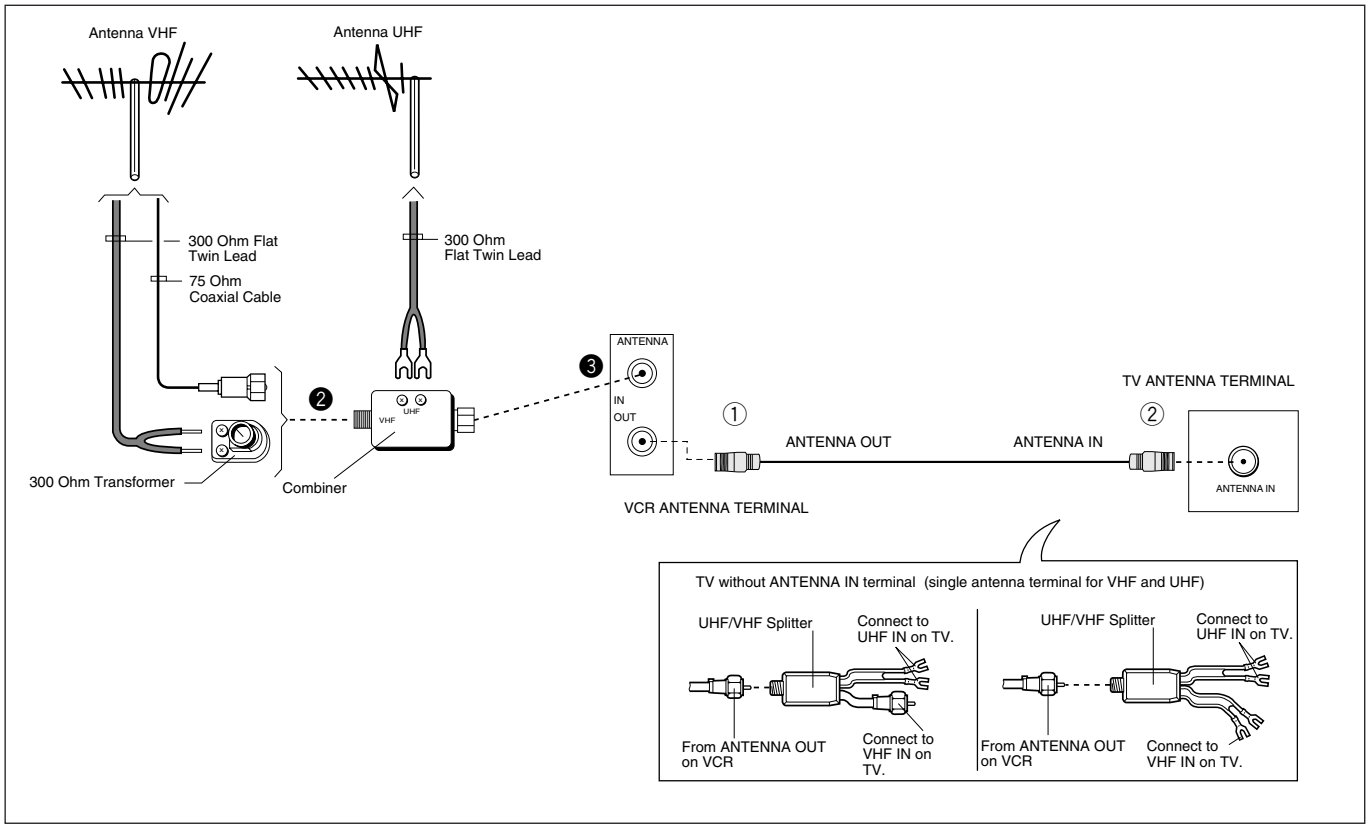
To connect separate UHF/VHF antennas to the VCR:

1. Disconnect the antennas from the back of your TV.
2. Connect the antenna leads to the combiner.
3. Screw or push the combiner onto the ANTENNA terminal on the VCR labeled ANTENNA IN.
4. When you are finished, refer to “Connecting the Television” to complete your connections.

Now that you’ve completed the antenna connections to your VCR, you’re ready to connect the VCR to the TV.

Because every television is different (especially older model TVs), your VCR may need to be connected in a variety of ways. See the Owner’s Manual for Instruction Information ON:

- **Determining if you need a splitter,**
- **Connecting TVs with audio and video inputs.**



Connecting a regular TV to the VCR

Before connecting the VCR to the TV, complete the cable or antenna connections to the VCR. (If you have not already done so.)

To connect a regular TV to the VCR:

1. Take the black cable that is supplied with your VCR (called a coaxial cable) and connect it to the ANTENNA terminal on the VCR labeled ANTENNA OUT.
2. Connect the other end of this cable to the terminal on your TV labeled ANTENNA IN. (This terminal may also be labeled VHF IN.) If you have an older TV without this kind of terminal, you will have to use a splitter and then connect the splitter to the television.

WARNING

Use the specified batteries.

Batteries of wrong type can lead to explosion.

Be sure to replace with batteries of the same type or equivalent batteries. Use the parts specified in the circuit diagram or parts list.

Confirm that the batteries are placed with their positive (+) and negative (-) in the correct position.

DISASSEMBLY

1. Removal of Top Cover

1. Remove the two Top Cover fastening screws (ⓐ) shown in Fig. 1 and remove the Top Cover in the direction shown by arrow.

2. Removal of Front Panel

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Jog Dial and the Shuttle Ring.
3. Unfasten the seven catches (ⓑ) shown in Fig. 1 and remove the Front Panel in the direction shown by arrows.
4. Disconnect the Connector OG inFig.1.

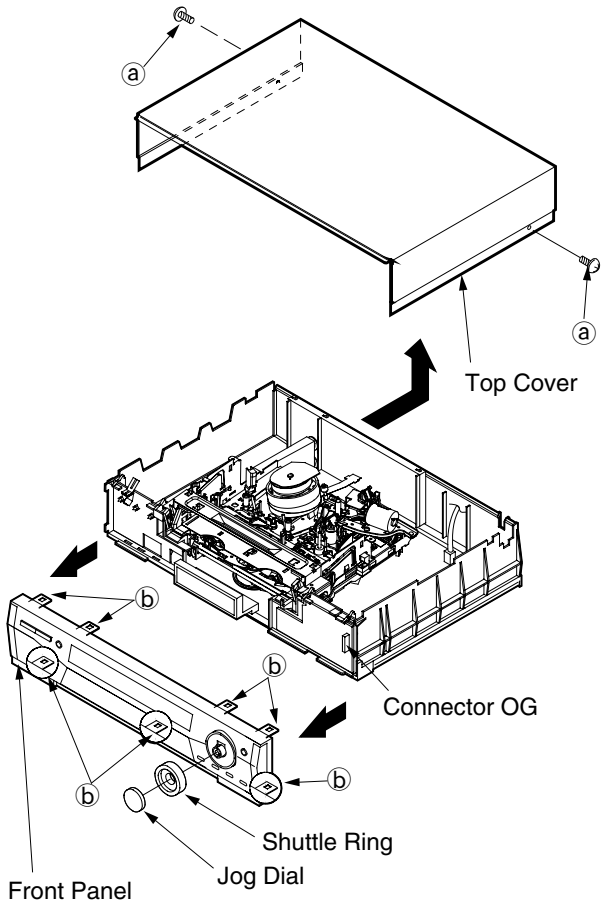


Fig. 1

3. Removal of Bottom Panel

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the two fastening screws (ⓐ) shown in Fig. 2.
3. Turn the set upside down as shown in Fig. 3.
4. Slide and lift the Bottom Panel in the direction of the arrows paying attention to the four catches (ⓑ) to remove it.

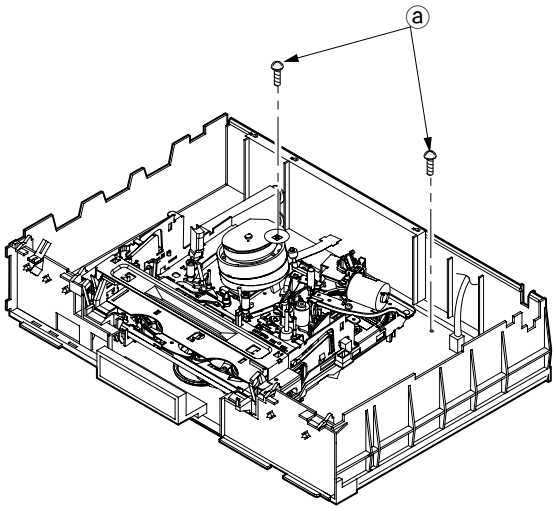


Fig. 2

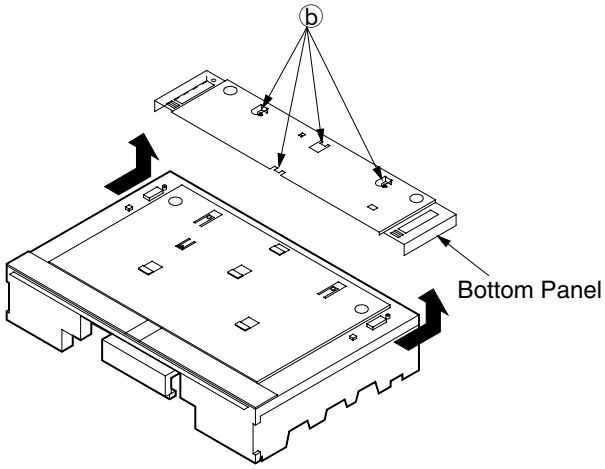


Fig. 3

4. Removal of DECK ASSY

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Short-circuit the cathode side of D927 and the GND of the DECK ASSY using the jig shown below.

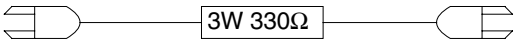
Note: The CAPSTAN MOTOR may be damaged without above short circuit.

4. Remove the one screw (ⓐ) and remove PCB HA Holder.
5. Disconnect the Connectors HH and HK on PCB-HEAD AMP.
6. Remove the two screws (ⓑ) shown in Fig. 4 and raise the PCB-HEAD AMP to remove it.
7. Remove the four screws (ⓒ) shown in Fig. 5.
8. Disconnect the Connectors MA, MD and ML on PCB-MAIN.
9. Release the two catches (ⓓ) shown in Fig.5 and raise the DECK ASSY to remove it.

Note1: Remove the DECK ASSY paying attention to the Connectors MC and MF under it.

Note2: Short-circuit the cathode side of D927 and the Shield Plate using the jig shown below before attaching the DECK ASSY.

Jig (Part No. : 859C548O10)



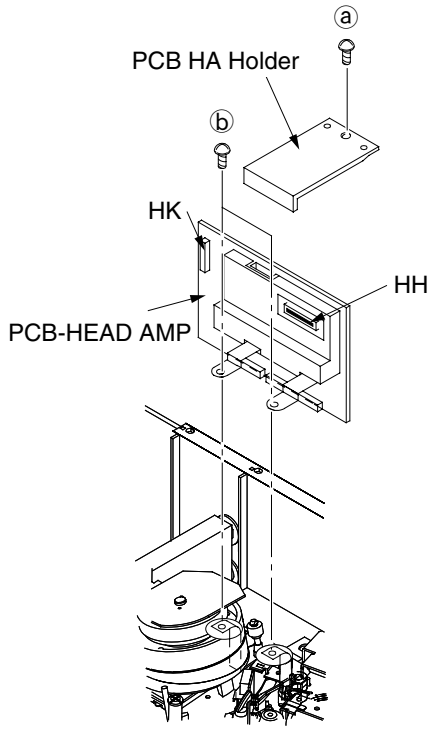


Fig. 4

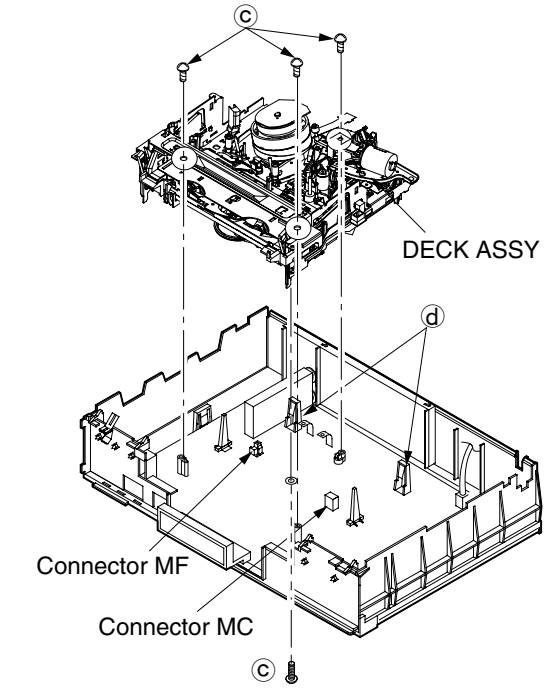


Fig. 5

HOW TO EXECUTE CIRCUIT BOARD SERVICE

CAUTION: BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE A.C. SOURCE.

LOCATION OF PRINT CIRCUIT BOARDS

Note :

- Take caution when removing flat cables to prevent any contact problem.
- Connect and disconnect the flat cables at right angles to the connector and make sure that it is completely secured.
- After servicing the PCB, restore the flat cable and leads to their former state.

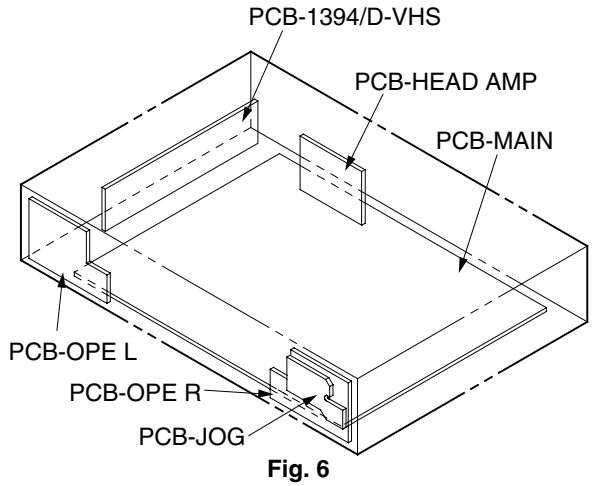


Fig. 6

1. PCB-OPE L

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Remove the Connector OS.
4. Unfasten the two catchs (ⓐ) shown in Fig. 7 and rotate the PCB-OPE L in the direction shown by arrow (ⓑ) and remove it in the direction shown by arrow (ⓒ).

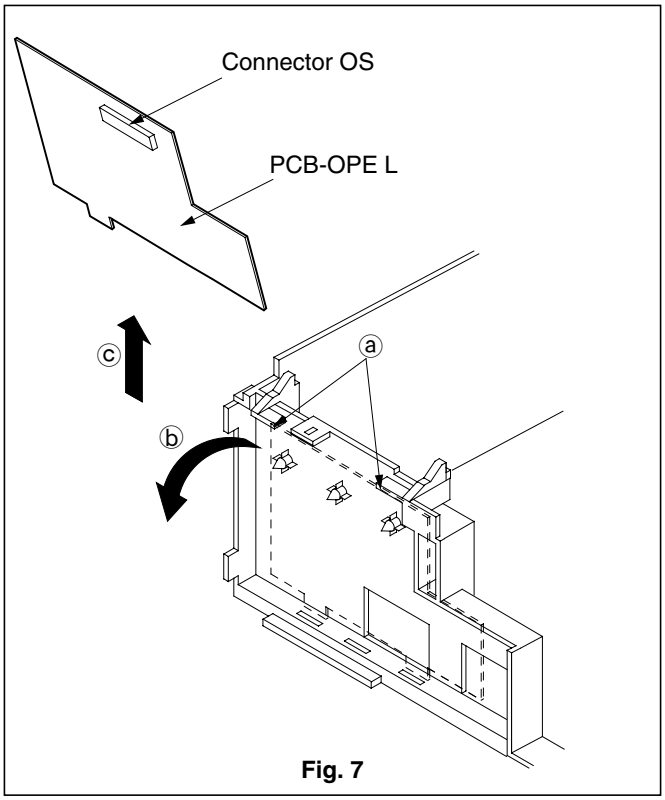


Fig. 7

2. PCB-OPE R

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Remove the Connector OJ.
4. Unfasten the two catchs (ⓐ) shown in Fig. 8 and rotate the PCB-OPE R in the direction shown by arrow (ⓑ) and remove it in the direction shown by arrow (ⓒ).

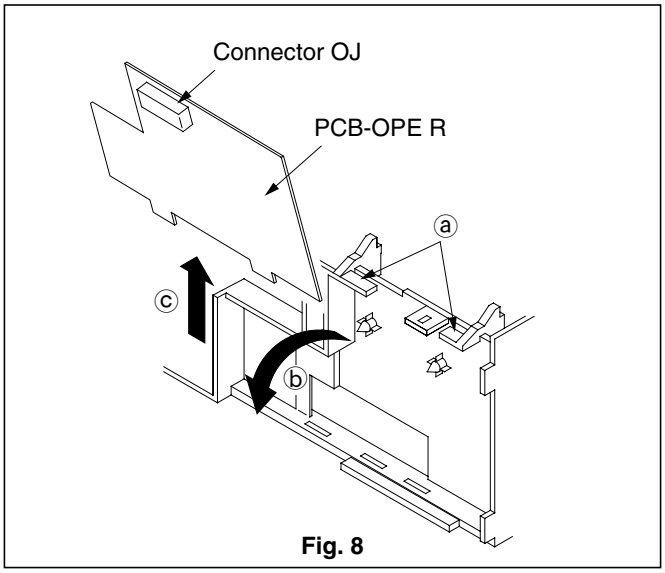


Fig. 8

3. PCB-JOG

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Unfasten the three screws (ⓐ) shown in Fig. 9 and remove the PCB-JOG.

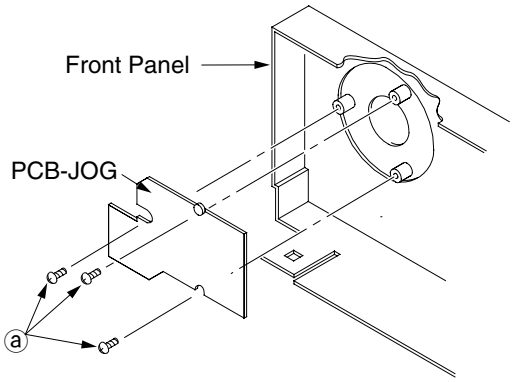


Fig. 9

4. PCB-1394/D-VHS

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Lift and remove the Cover D VHS as shown in Fig.10.
3. Remove the one screw (ⓐ) and remove the PCB HOLDER shown in fig. 10.
4. Disconnect the connectors EE ,EK and EX on the PCB-1394/D-VHS .
5. Pull out the Part A,lift and remove the Spring Earth EMC as shown in Fig. 10.
6. Unfasten the one screws (ⓑ) shown in Fig. 10 and remove the ASSY PCB-1394/D-VHS.
7. Separate the bottom of the Shield Cover from the ASSY PCB-1394/D-VHS first. Remove the Shield Cover moving the bottom in the direction shown by the arrow (Ⓐ) as shown in Fig. 10.
8. Disconnect thirteen soldering connections and remove the PCB-1394/D-VHS as shown in Fig. 11.

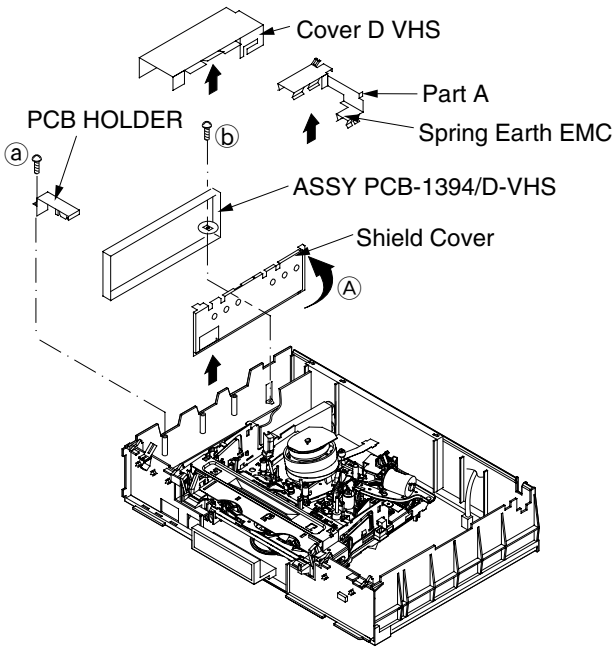


Fig. 10

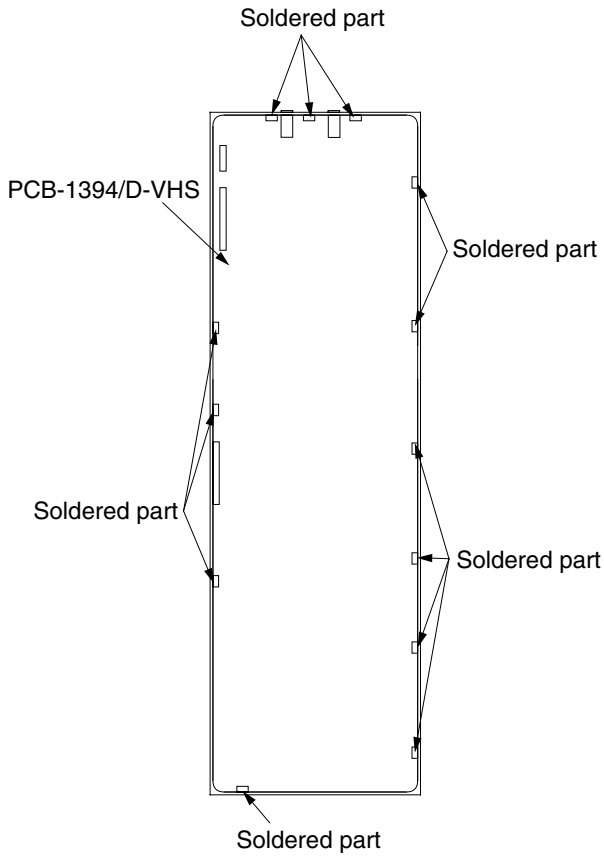


Fig. 11

5. PCB-MAIN

1. Carry out steps 1 and 2 of “3.Removal of Bottom Panel” of “DISASSEMBLY”
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Remove the DECK ASSY.
   (Refer to Para. 4 of the DISASSEMBLY.)
4. Lift and remove the Cover D VHS as shown in Fig.10.
5. Disconnect the connectors EE and EX on the PCB-1394/D-VHS .
6. Pull out the Part A,lift and remove the Spring Earth EMC as shown in Fig. 10.
   (Refer to Para. 4 of the HOW TO EXECUT CIRCUIT BOARD SERVICE.)
7. Remove the two screws (ⓐ) shown in Fig. 12.
8. Remove the Holder for the AC Power Cord from the Base Chassis shown in Fig. 13.
9. Disconnect the connectors ME,MJ and MS on the PCB-MAIN .
10. Release the two fastening catches (ⓑ) shown in Fig. 12. Raise the PCB-MAIN to remove it.
11. Release the three fastening catches (ⓒ) and remove the Antenna Cover shown in Fig. 14.

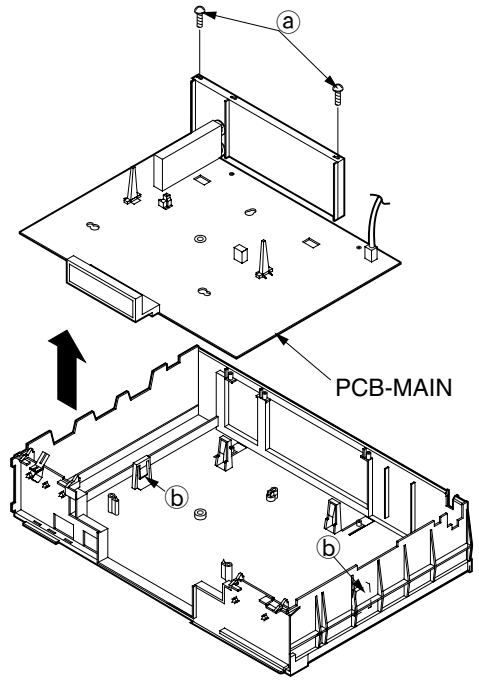


Fig. 12

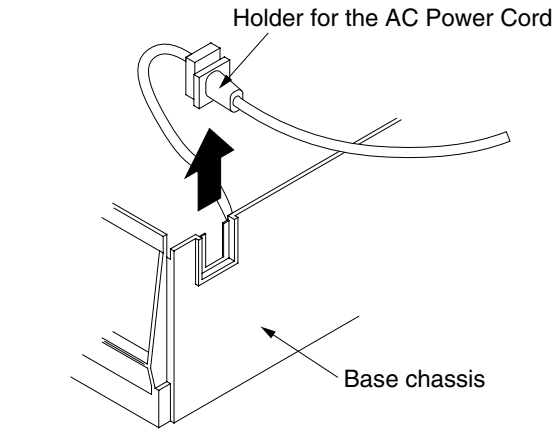


Fig. 13

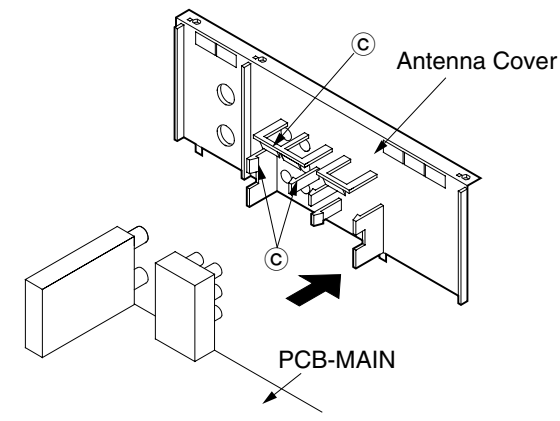


Fig. 14

CHIP PARTS REPLACEMENT

CHIP PARTS REPLACEMENT

Some resistors, shorting jumpers (0Ω resistor), ceramic capacitors, transistors and diodes are chip parts.
When replacing these parts, note the following cautions.

Cautions :

A. Use fine tipped, well insulated soldering pencil (iron), about 30 watts, and tweezers.
B. Melt the solder and remove the Chip Parts carefully not to tear off the copper foil of the printed circuit board.
C. Discard removed chips ; do not reuse them.
D. Do not apply heat for more than 3 seconds to new Chip Parts.
E. Avoid using a rubbing stroke when soldering.
F. Take care not to scratch, or damage the Chip Parts when soldering.
G. Supplementary cementing is not required.

1. Removal of Chip Parts (Resistors, capacitors, etc.)

A. Grasp the part with tweezers. Melt the solder at both sides alternately, remove one side of the part with a twisting motion.
B. Melt the solder at the other side and remove the part.

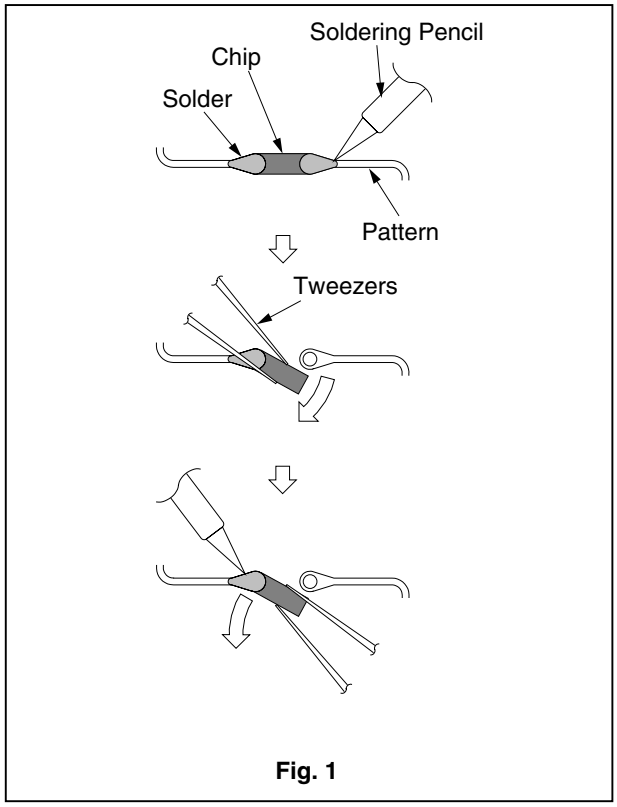


Fig. 1

2. Removal of Chip Parts (Transistors)

A. Melt the solder of one lead. Lift the side of that lead upward.
B. Simultaneously melt the solder of the two remaining leads and lift the part from the PCB.

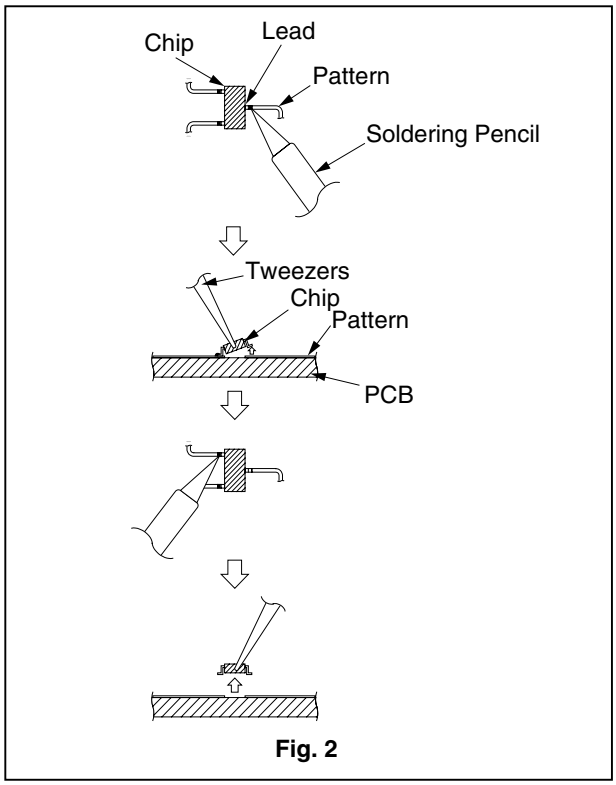


Fig. 2

3. Replacement

A. Presolder the contact points of the circuit pattern.
B. Press the part downward with tweezers and apply the soldering pencil as shown in Fig. 3.

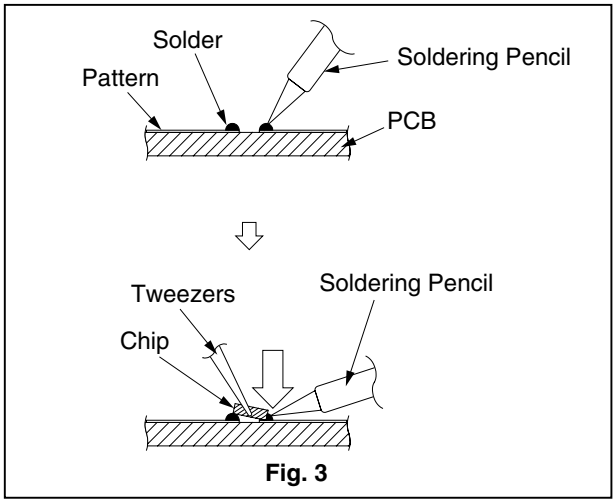


Fig. 3

MECHANICAL ADJUSTMENT AND REPLACEMENT

1. DECK Cleaning

The following Parts require cleaning whenever serviced in order to maintain satisfactory performance.

1-1. VIDEO HEAD

1. Clean the VIDEO HEAD according to the following method. Dust and other foreign objects on the VIDEO HEAD disturb the normal PLAYBACK picture. To clean the VIDEO HEAD, hold a VIDEO HEAD cleaning cloth dampened with alcohol against the DRUM and slowly turn the DRUM counter-clockwise.

Note : Do not directly touch the HEADS installed to the UPPER DRUM ASSY. The HEADS are very hard but brittle to shock (especially to shock in the vertical direction) and easily breakable. Never apply force to it in the vertical direction.

2. Allow the residual alcohol to dry thoroughly before running a tape. The residual alcohol on the HEADs may damage the tape if not dried completely.

UPPER DRUM ASSY cleaning

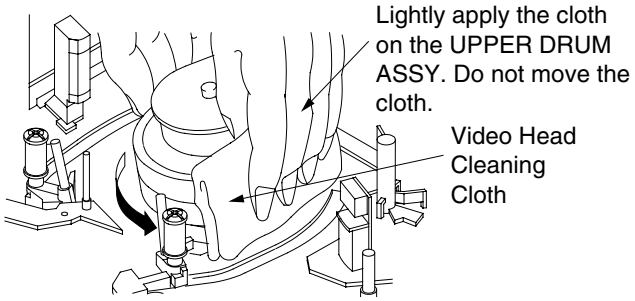


Fig. 1-1

1-2. Tape Running System

Clean the following Parts of the Tape Running System.

1. TENSION PIN
2. F/E HEAD
3. SLANT POLE (SP)
4. SLANT POLE (TU)
5. A/C HEAD
6. GUIDE POLE (TU)
7. PINCH ROLLER
8. GUIDE PIN (TU)
9. GUIDE ROLLER (SP)
10. UPPER / LOWER DRUM ASSY
11. GUIDE ROLLER (TU)
12. CAPSTAN SHAFT

1. Clean the Tape Running System, using a piece of gauze dampened with alcohol, except for the GUIDE ROLLER (SP), GUIDE ROLLER (TU), and PINCH ROLLER which require to be cleaned with a piece of dry gauze.
2. Allow the residual alcohol to dry thoroughly before running the tape. The residual alcohol on the SYSTEM may damage the tape if not dried completely.

1-3. REEL DISK Drive System

1. Clean the BRAKE side and REEL BELT of the REEL DISK Drive System.
2. Clean the REEL DISK Drive System, using a piece of gauze dampened with alcohol, except for the REEL BELT which requires cleaning with a piece of dry gauze.
3. Allow the residual alcohol to dry thoroughly before operation.

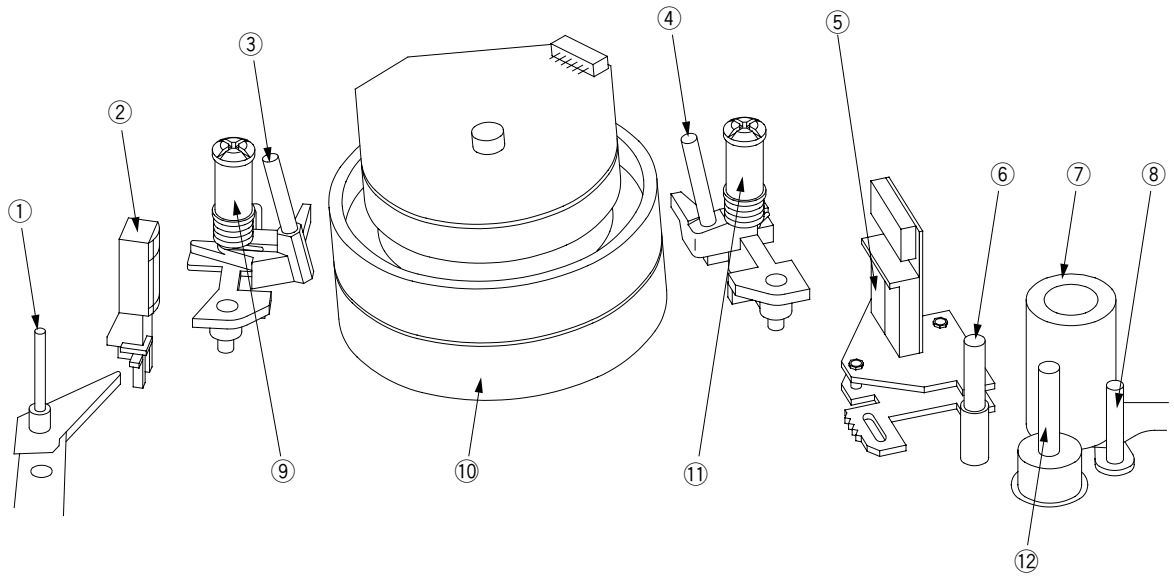


Fig. 1-2

2. Replacement of Major Parts

2-1. CLEANING ARM, FELT RING

SET POSITION : Normal

(Removal)

1. Release the two catches (ⓐ) of the CLEANING ARM shown in the Fig. 2-1 to remove the CLEANING ARM.
2. Release the two catches (ⓑ) of the CLEANING ARM shown in the Fig. 2-1 to remove the FELT RING.

(Installation)

1. Install the FELT RING shown in the Fig. 2-1 to the CLEANING ARM.
2. Install the CLEANING ARM shown in the Fig. 2-1.

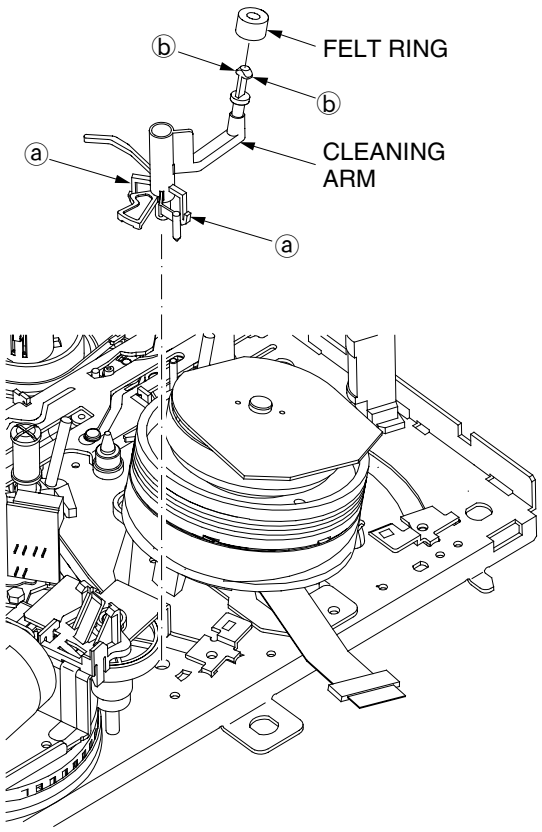


Fig. 2-1

2-2. STAY PLATE

SET POSITION : Normal

(Removal)

1. Remove the two screws (ⓐ) fastening the STAY PLATE shown in the Fig. 2-2 to remove the STAY PLATE.

(Installation)

1. Install the STAY PLATE shown in the Fig. 2-2.

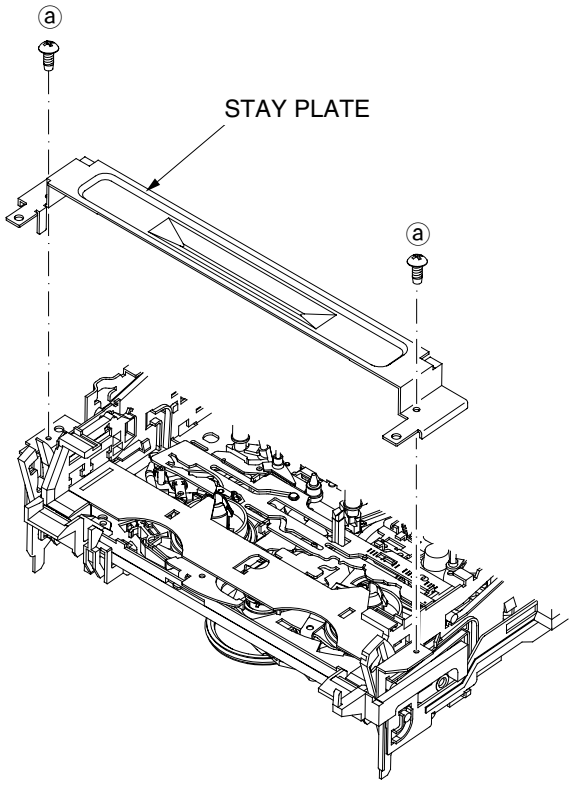


Fig. 2-2

2-3. BOTTOM ASSY

SET POSITION : Normal

Remove the following part before replacing the BOTTOM ASSY. Refer to the corresponding item to install it.

- STAY PLATE (Item 2-2)

(Removal)

1. Move the WORM WHEEL in the Fig. 2-3-1 in the direction shown by the arrow Ⓐ. And match the Boss ⓐ of the BOTTOM ASSY with the Hole in the MAIN PLATE ASSY.
2. Lift the BOTTOM ASSY in the Fig. 2-3-1 in the direction shown by the arrow Ⓑ and pull it out in the direction shown by the arrow Ⓒ.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the Grooves of the MAIN PLATE ASSY shown in the Fig. 2-3-2.
2. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the Bosses of the BOTTOM ASSY shown in the Fig. 2-3-2.
3. Rotate the WORM WHEEL shown in the Fig. 2-3-1 so that the ARM (SP) stands vertically.
4. Insert the Boss ⓑ of the BOTTOM ASSY shown in the Fig. 2-3-2 in the Upper Groove of the MAIN PLATE and the Boss ⓒ in the Lower Groove.
5. Insert the Boss ⓓ of the BOTTOM ASSY to the Upper Groove through the Hole in the MAIN PLATE ASSY shown in the Fig. 2-3-1 and the Boss ⓔ to the Lower Groove through the slot in the ARM (SP).

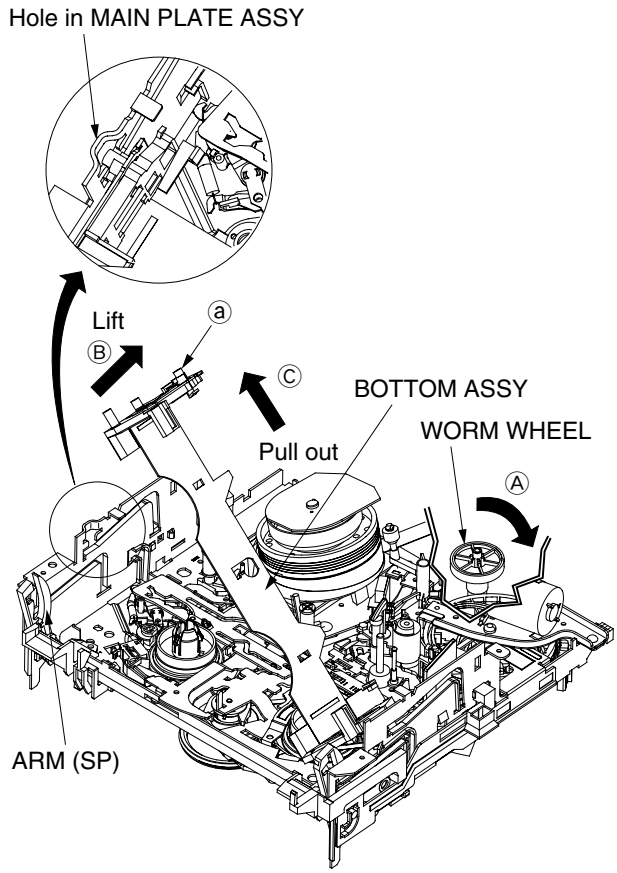


Fig. 2-3-1

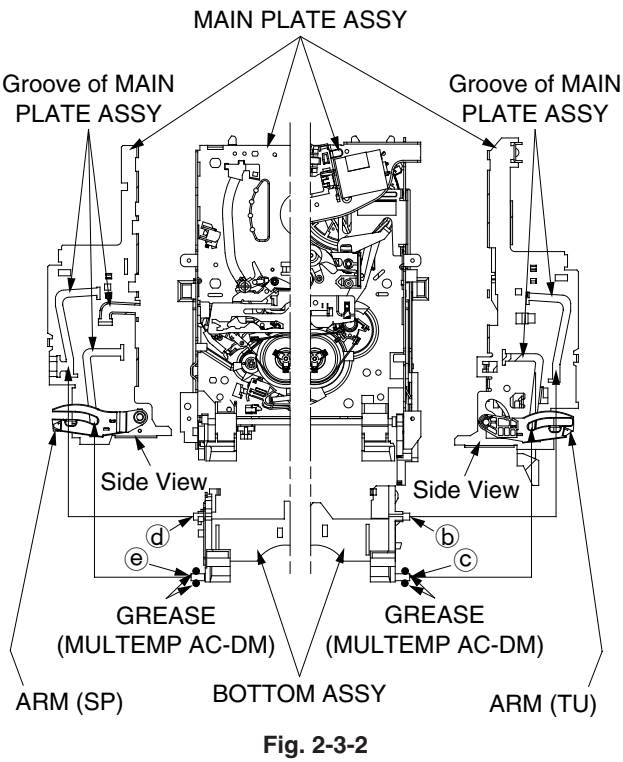


Fig. 2-3-2

2-4. INSERT GUIDE (TU)

SET POSITION : Normal

Remove the following parts before replacing the INSERT GUIDE (TU). Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)

(Removal)

1. Remove the screw (ⓐ) fastening the INSERT GUIDE (TU) shown in the Fig. 2-4 to remove the INSERT GUIDE (TU).

(Installation)

1. Install the INSERT GUIDE (TU) shown in the Fig. 2-4.

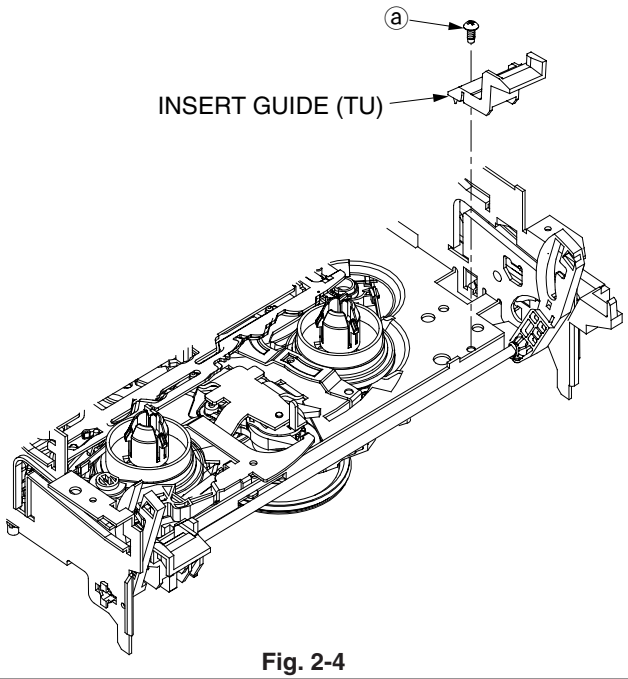


Fig. 2-4

2-5. INSERT GUIDE (SP)

SET POSITION : Normal

Remove the following parts before replacing the INSERT GUIDE (SP). Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)

(Removal)

1. Remove the screw (ⓐ) fastening the INSERT GUIDE (SP) shown in the Fig. 2-5 to remove the INSERT GUIDE (SP).

(Installation)

1. Install the INSERT GUIDE (SP) shown in the Fig. 2-5.

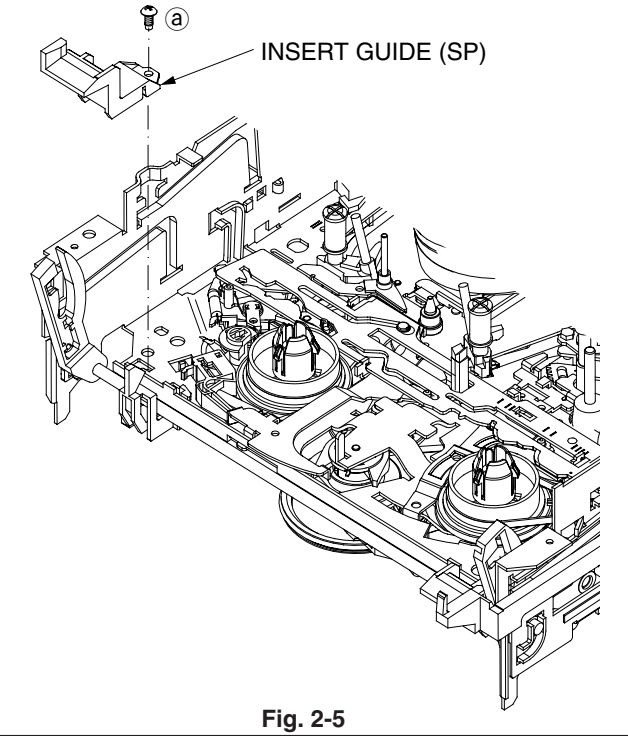


Fig. 2-5

2-6. REC HOLDER, REC LEVER, REC SPRING

SET POSITION : Upside down

(Removal)

1. Remove the screw (ⓐ) fastening the REC HOLDER shown in the Fig. 2-6 to remove the REC HOLDER.
2. Release the REC SPRING shown in the Fig. 2-6 from the catch (ⓑ) of the REC HOLDER to remove the REC LEVER.
3. Release the two catches (ⓒ) of the REC LEVER shown in the Fig. 2-6 to remove the REC SPRING.

(Installation)

1. Install the REC SPRING shown in the Fig. 2-6 to the REC LEVER and hook the REC SPRING to the catches (c).
2. Install the REC LEVER shown in the Fig. 2-6 to the REC HOLDER.
3. Hook the REC SPRING shown in the Fig. 2-6 to the catch (b).
4. Install the REC HOLDER shown in the Fig. 2-6.

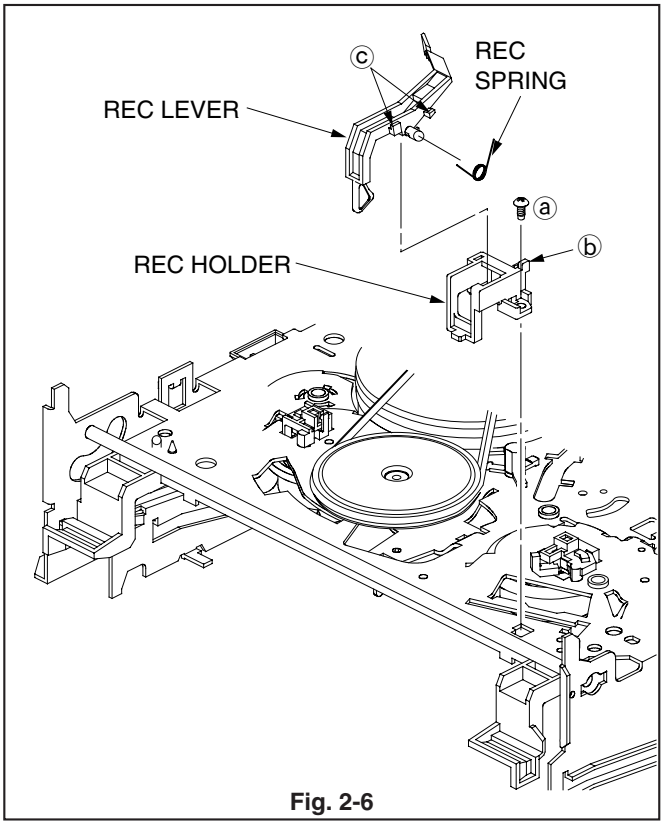


Fig. 2-6

2-7. F/L ARM ASSY, F/L BEARING

SET POSITION : Normal

Remove the following parts before replacing the F/L ARM ASSY, F/L BEARING. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- INSERT GUIDE (TU) (Item 2-4)
- INSERT GUIDE (SP) (Item 2-5)
- REC HOLDER (Item 2-5)

(Removal)

1. Release the catch (ⓐ) of the F/L BEARING shown in the Fig. 2-7 and pull out the F/L ARM ASSY in the direction shown by the arrow Ⓐ.

Note : Do not pull the F/L ARM by force because it may break the catch (ⓐ) of the F/L BEARING.

2. Release the catch (ⓑ) of the F/L BEARING shown in the Fig. 2-7 and rotate the F/L BEARING by 90 degrees to remove it.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the Groove of the MAIN PLATE ASSY shown in the Fig. 2-7.
2. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the Boss of the ARM (SP) shown in the Fig. 2-7.
3. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the Bosses of the ARM (TU) shown in the Fig. 2-7.
4. Install the F/L BEARING shown in the Fig. 2-7.
5. Insert the Boss ⓒ of the F/L ARM ASSY shown in the Fig. 2-7 into the Groove ⓓ of the MAIN PLATE ASSY to install the F/L ARM ASSY.

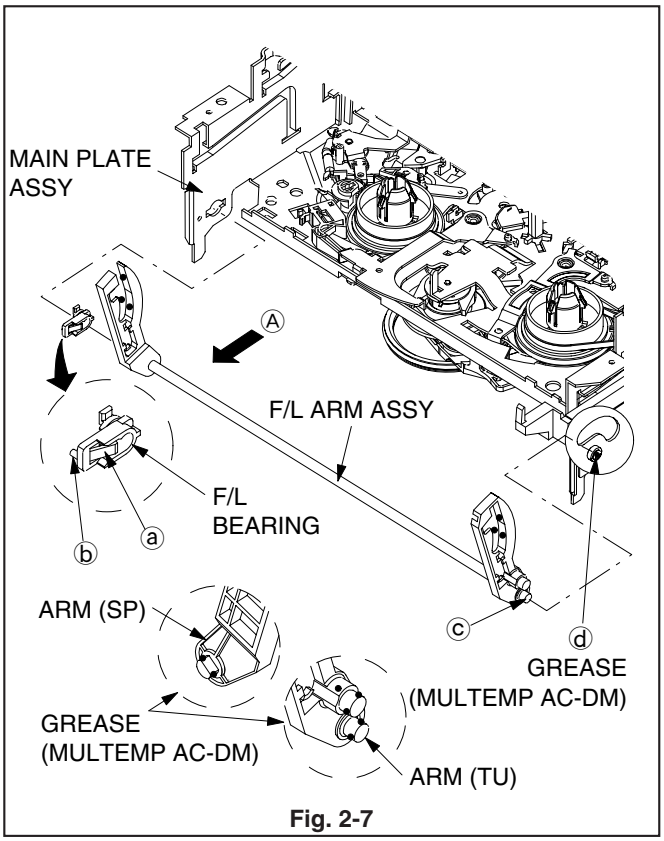


Fig. 2-7

2-8. A/C HEAD UNIT

SET POSITION : Normal

(Removal)

1. Remove the LEAD CONNECTOR of the A/C HEAD UNIT shown in the Fig. 2-8.
2. Remove the two screws (ⓐ) fastening the A/C HEAD UNIT shown in the Fig. 2-8 to remove the A/C HEAD UNIT.

(Installation)

1. Install the A/C HEAD UNIT shown in the Fig. 2-8.

Note : Never touch the Head of the A/C HEAD UNIT shown in the Fig. 2-8. Clean the dirt on the Head with alcohol if necessary.

2. Install the LEAD CONNECTOR of the A/C HEAD UNIT shown in the Fig. 2-8.
3. Perform the Item 3-3. "A/C HEAD Adjustment" and Item 3-4. "Phase Adjustment" of the "Interchangeability Adjustment of the Mechanism".

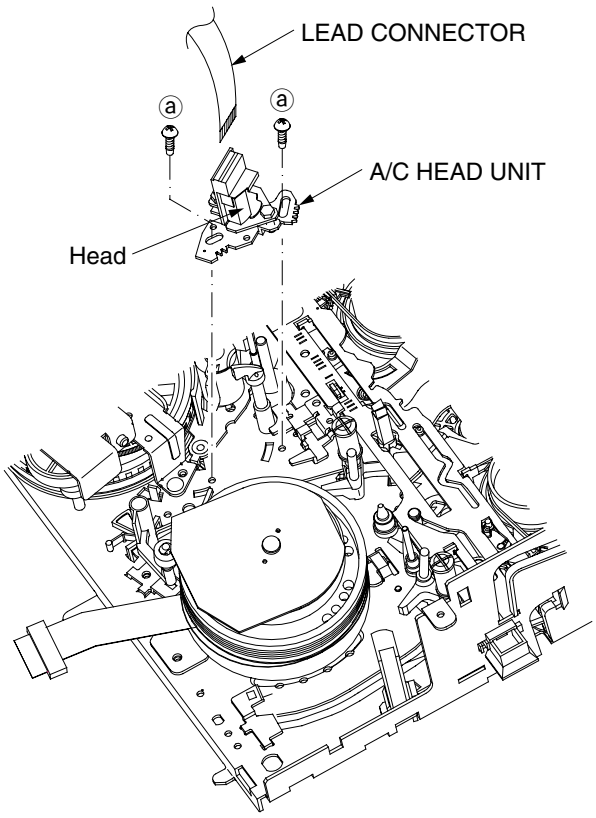


Fig. 2-8

2-9. F/E HEAD

SET POSITION : Normal

(Removal)

1. Lift the F/E HEAD shown in the Fig. 2-9-1 in the direction by the arrow Ⓐ to remove it.

Note : Be sure to replace the removed F/E HEAD with a new one.

(Installation)

1. Install the F/E HEAD shown in the Fig. 2-9-1.

Note : Never touch the Head shown in the Fig. 2-9-2. Clean it with alcohol if necessary.

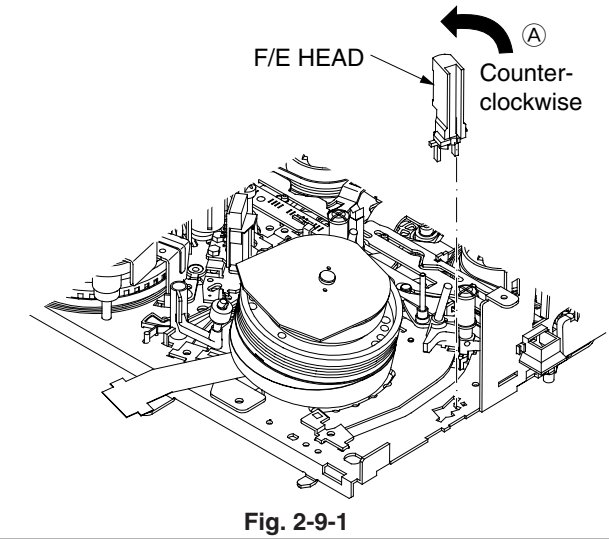


Fig. 2-9-1

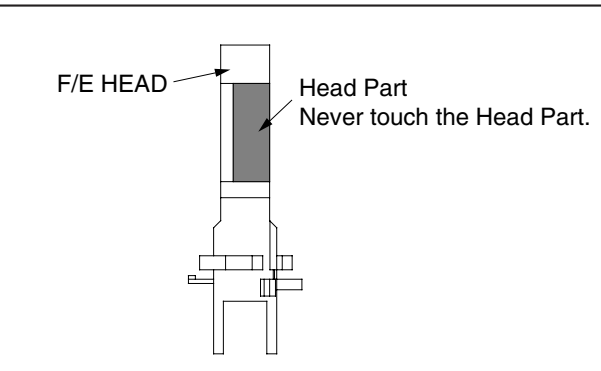


Fig. 2-9-2

2-10. SENSOR COVER (TU)

SET POSITION : Normal

(Removal)

1. Release the catch (ⓐ) of the SENSOR COVER (TU) shown in the Fig. 2-10 to remove the SENSOR COVER (TU).

(Installation)

1. Install the SENSOR COVER (TU) shown in the Fig. 2-10.

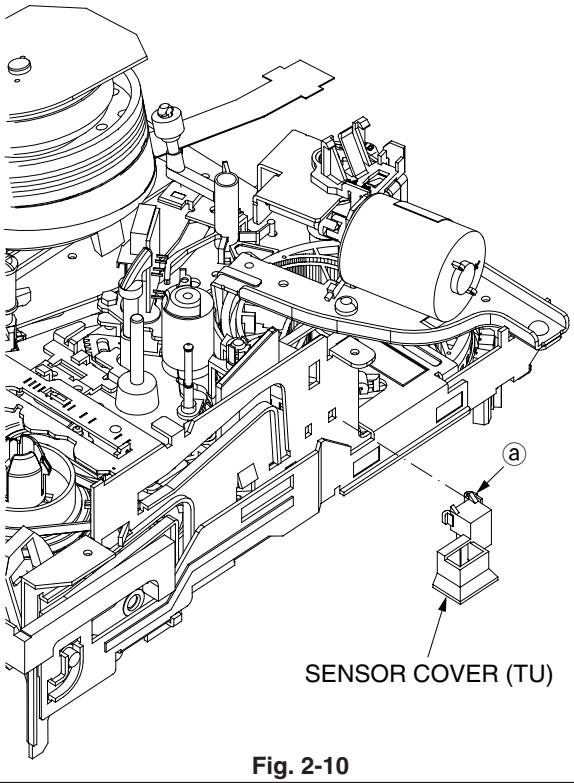


Fig. 2-10

2-11. SENSOR COVER (SP)

SET POSITION : Normal

(Removal)

1. Remove the catch (ⓐ) of the SENSOR COVER (SP) shown in the Fig. 2-11 to remove the SENSOR COVER (SP).

(Installation)

1. Install the SENSOR COVER (SP) shown in the Fig. 2-11.

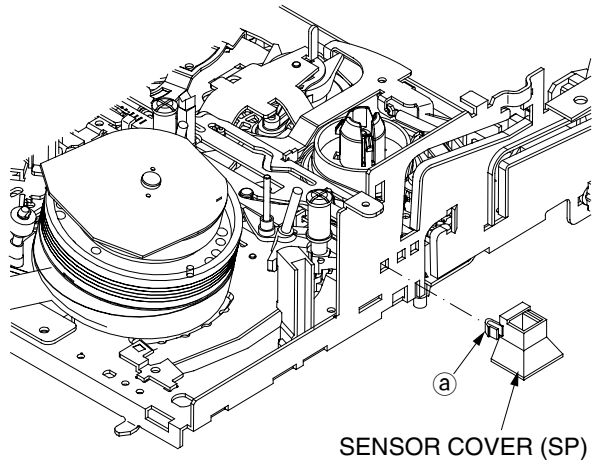


Fig. 2-11

2-12. REV UNIT (TU), REV UNIT (SP)

SET POSITION : Upside down

(Removal)

1. Release the two catches (ⓐ) of the REV UNIT (TU) shown in the Fig. 2-12 to remove the REV UNIT (TU).
2. Release the two catches (ⓑ) of the REV UNIT (SP) shown in the Fig. 2-12 to remove the REV UNIT (SP).

(Installation)

1. Clean the dirt on the transparent part of the REV UNIT (TU) with a VIDEO HEAD cleaning cloth.

Note : Never use solvent such as alcohol to clean the REV UNIT (TU).

2. Install the REV UNIT (TU) shown in the Fig. 2-12.
3. Clean the dirt on the transparent part of the REV UNIT (SP) with a VIDEO HEAD cleaning cloth.

Note : Never use solvent such as alcohol to clean the REV UNIT (SP).

4. Install the REV UNIT (SP) shown in the Fig. 2-12.

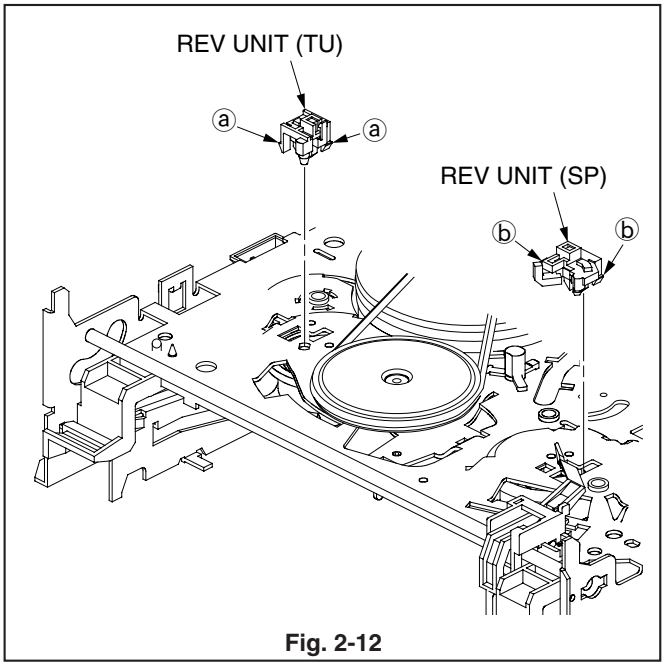


Fig. 2-12

2-13. MODE POSITION UNIT

SET POSITION: Upside down

(Removal)

1. Release the two catches (ⓐ, ⓑ) of the MODE POSITION UNIT shown in the Fig. 2-13 to remove the MODE POSITION UNIT.

(Installation)

1. Install the catch (ⓑ) of the MODE POSITION UNIT shown in the Fig. 2-13.
2. Install the catch (ⓐ) of the MODE POSITION UNIT shown in the Fig. 2-13.

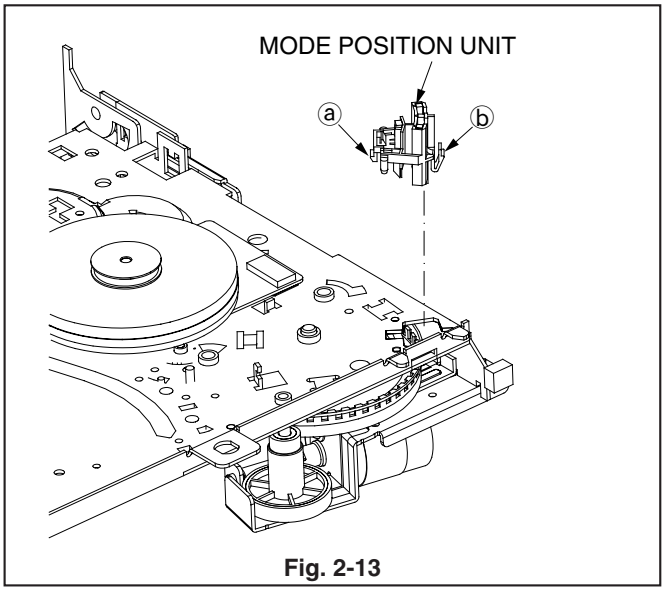


Fig. 2-13

2-14. REEL BELT, PULLEY BUSH, THRUST WASHER, BELT PULLEY, SHIFT SLIDER, PULLEY GEAR ASSY, SLIP GEAR, SLIP SPRING, SLIP WASHER, THRUST WASHER, SLIP ADJUSTER, IDLER 2 UNIT

SET POSITION : Upside down

(Removal)

1. Remove the REEL BELT shown in the Fig. 2-14-1.
2. Move the SHIFT SLIDER in the Fig. 2-14-1 in the direction shown of the arrow Ⓐ to remove the SHIFT SLIDER from the SHIFT LEVER.
3. Release the two catches (ⓐ) of the PULLEY BUSH shown in the Fig. 2-14-1 to remove the PULLEY BUSH.

Note : Be sure to replace the removed PULLEY BUSH with a new one.

4. Remove the units from the THRUST WASHER to IDLER 2 UNIT shown in the Fig. 2-14-1.

(Installation)

Note : Be careful so that GREASE and OIL does not adhere on the Felt Side of the PULLEY GEAR ASSY or the Grooved Side of the SLIP GEAR shown in the Fig. 2-14-4.

1. Apply OIL (FLOIL 948P) [859D154O20] to the SHAFT for the IDLER 2 UNIT shown in the Fig. 2-14-1.
2. Apply GREASE (PG-641) [859D055O30] to the parts on the IDLER 2 UNIT specified in the Fig. 2-14-1.
3. Apply GREASE (MULTEMP AC-DM) [859D055O90] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-14-1.
4. Apply GREASE (PG-641) [859D055O30] to the parts on the new SHIFT SLIDER specified in the Fig. 2-14-2.
5. Apply GREASE (PG-641) [859D055O30] to the parts on the new SLIP ADJUSTER specified in the Fig. 2-14-2.
6. Apply GREASE (PG-641) [859D055O30] to the parts on the new BELT PULLEY specified in the Fig. 2-14-3.
7. Install the IDLER 2 UNIT shown in the Fig. 2-14-1.
8. Install the SLIP ADJUSTER shown in the Fig. 2-14-3, matching the Lug of the SLIP ADJUSTER with the Center Notch of the IDLER 2 UNIT.

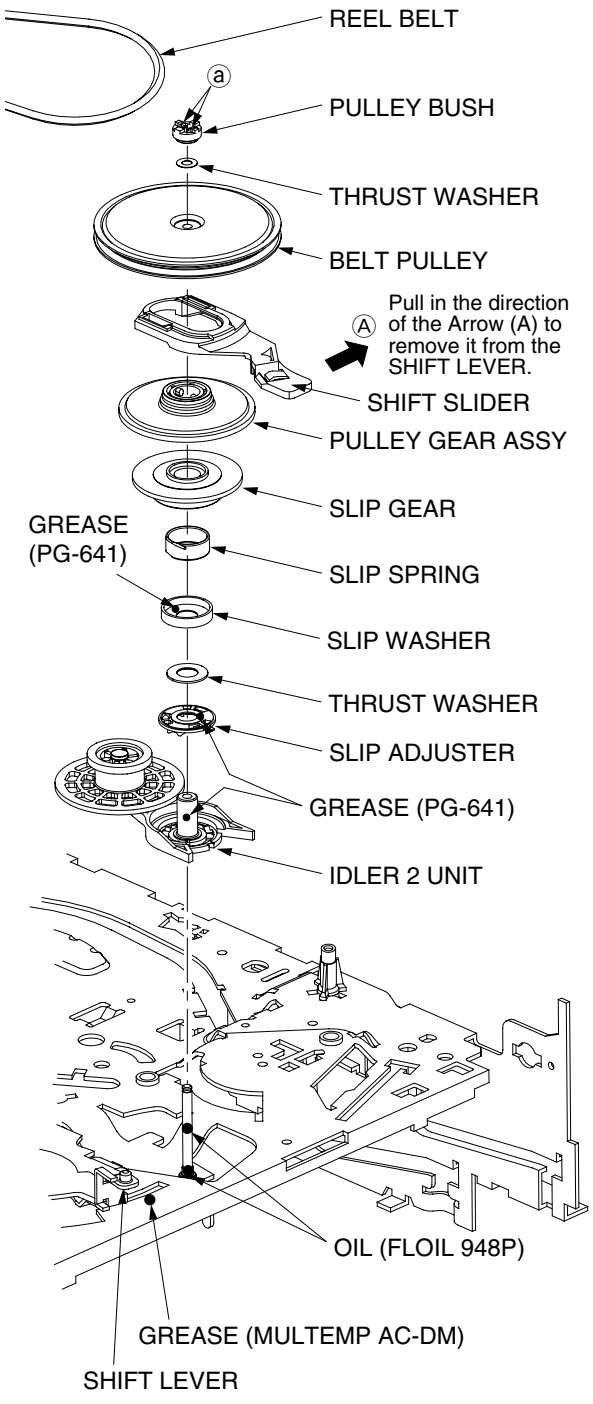
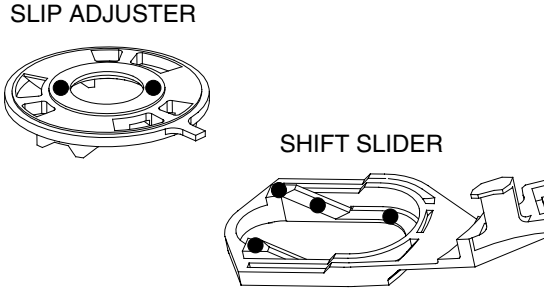


Fig. 2-14-1



Apply GREASE (PG-641) to the parts ● .

Fig. 2-14-2

9. Install the units from the SLIP WASHER to REEL BELT shown in the Fig. 2-14-1.

Note1 : Be sure to replace the removed PULLEY BUSH with a new one.

Note2 : Attach the SLIP SPRING with its straight end facing the SLIP GEAR side.

Note3 : Attach the SLIP WASHER with its position set as shown in the Fig. 2-14-5.

Note4 : Apply GREASE (PG-641) [859D055O30] to the part on the SLIP WASHER specified in the Fig. 2-14-5.

10. Install the SHIFT SLIDER to the SHIFT LEVER shown in the Fig. 2-14-1.

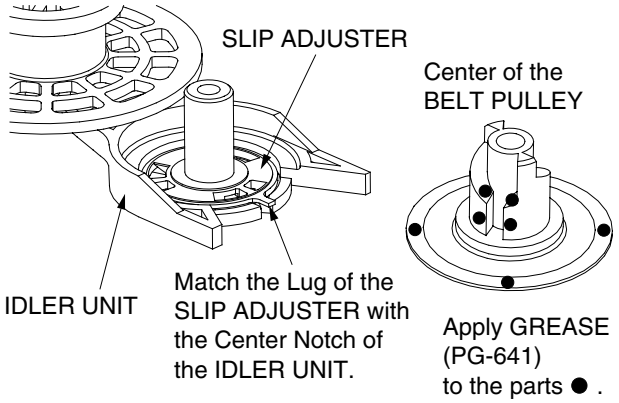


Fig. 2-14-3

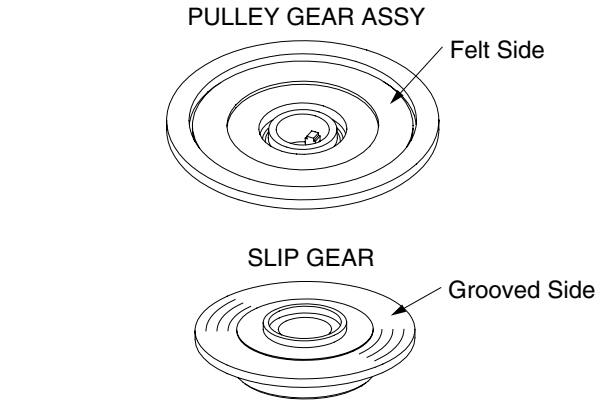


Fig. 2-14-4

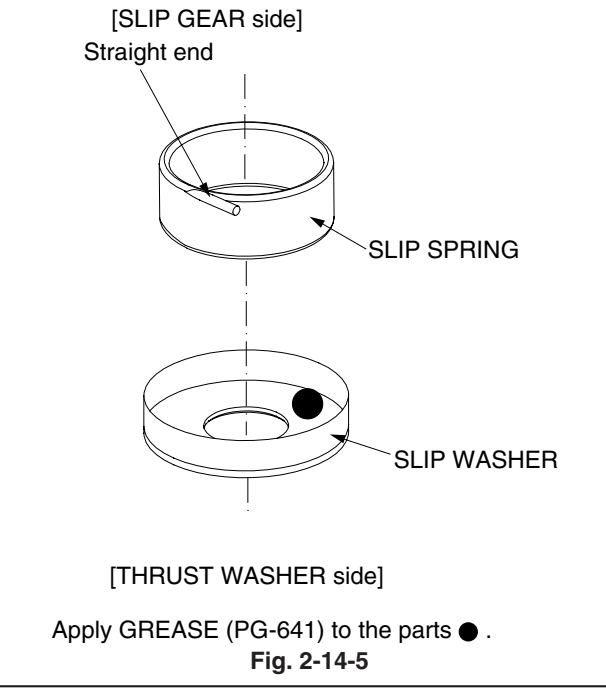


Fig. 2-14-5

2-15. CAPSTAN BRAKE SPRING, CAPSTAN BRAKE ASSY

SET POSITION : Upside down

(Removal)

1. Remove the CAPSTAN BRAKE SPRING shown in the Fig. 2-15.
2. Remove the catch (ⓐ) of the CAPSTAN BRAKE ASSY shown in the Fig. 2-15 to remove the CAPSTAN BRAKE ASSY.

(Installation)

1. Install the CAPSTAN BRAKE ASSY shown in the Fig. 2-15.
2. Install the CAPSTAN BRAKE SPRING shown in the Fig. 2-15.

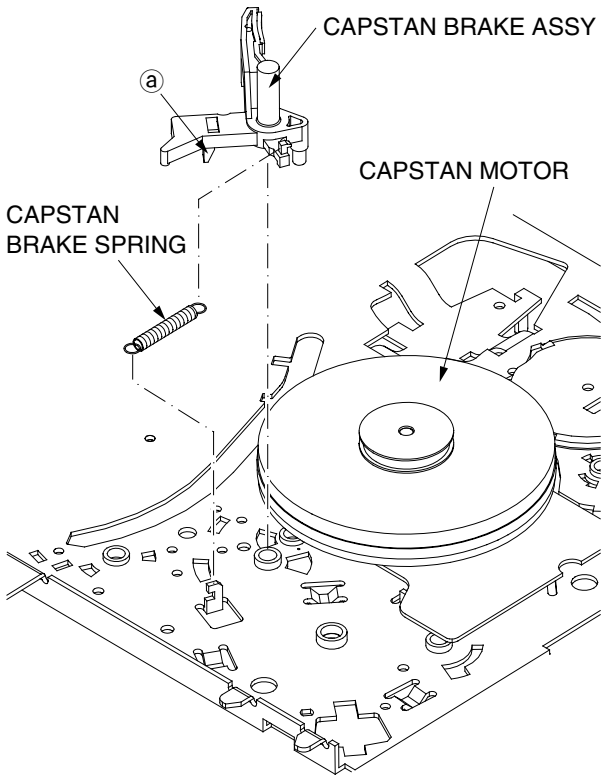


Fig. 2-15

2-16. FC HOLDER, MOTOR HOLDER, LOADING WORM, LOADING MOTOR ASSY, WORM WHEEL

SET POSITION : Normal

(Removal)

1. Release the two catches (ⓐ) of the FC HOLDER shown in the Fig. 2-16-1 to remove the FC HOLDER.
2. Remove the two screws (ⓑ) fastening the MOTOR HOLDER shown in the Fig. 2-16-1 to remove the MOTOR HOLDER.
3. Remove the two screws (ⓒ) fastening the LOADING MOTOR ASSY shown in the Fig. 2-16-1 to remove the LOADING MOTOR ASSY and LOADING WORM.
4. Remove the WORM WHEEL.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the LOADING WORM shown in the Fig. 2-16-2.
2. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the WORM WHEEL shown in the Fig. 2-16-2.
3. Install the WORM WHEEL.
4. Install the LOADING WORM, LOADING MOTOR ASSY to the MOTOR HOLDER.

Note : Tighten the screw (ⓒ) shown in the Fig. 2-16-1 after putting the LUG TERMINAL on the screw.

5. Install the MOTOR HOLDER.
6. Install the FC HOLDER.

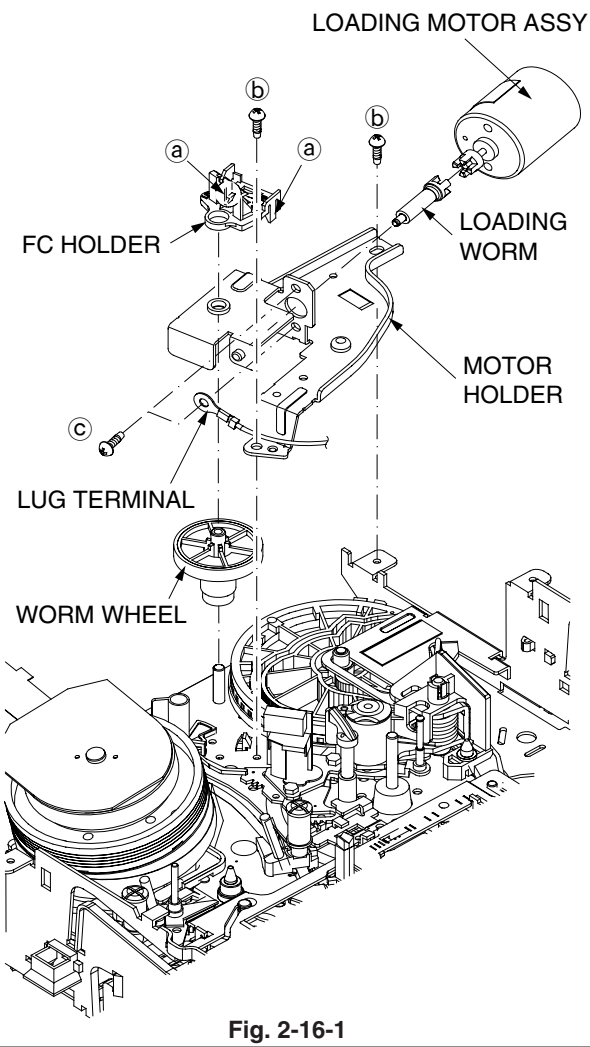
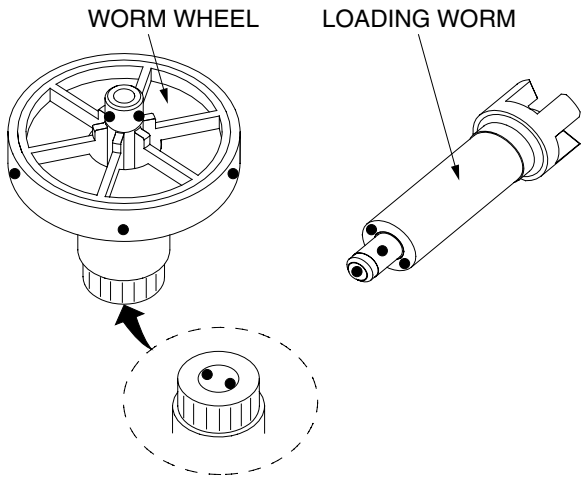


Fig. 2-16-1



Apply GREASE (MULTEMP AC-DM) to the parts ● .

Fig. 2-16-2

2-17. PINCH ARM CAP, PINCH UNIT

SET POSITION : Normal

(Removal)

1. Release the two catches (ⓐ) of the PINCH ARM CAP shown in the Fig. 2-17 to remove the PINCH ARM CAP.
2. Remove the PINCH UNIT shown in the Fig. 2-17.

(Installation)

1. Insert Part Ⓐ of the PINCH UNIT shown in the Fig. 2-17 in the most external groove of the MAIN CAM.
2. Install the PINCH ARM CAP matching the Part Ⓑ of the PINCH ARM CAP with the Rib of the MAIN PLATE ASSY.

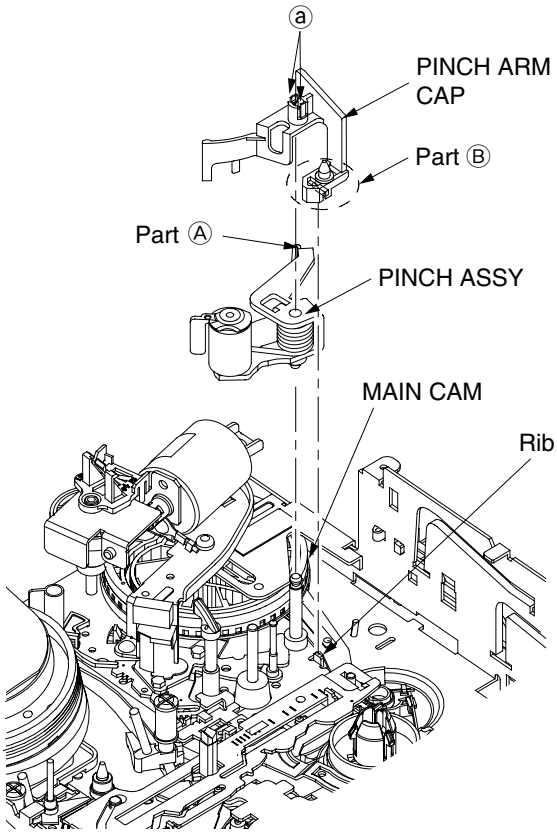


Fig. 2-17

2-18. F/L PLATE, DOOR ARM

SET POSITION : Normal

Remove the following parts before replacing the F/L PLATE, DOOR ARM. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- SENSOR COVER (TU) (Item 2-10)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)

(Removal)

1. Slightly lift the back of the F/L PLATE (MAIN CAM side) shown in the Fig. 2-18-1 to remove the F/L PLATE.
2. Remove the DOOR ARM.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the points on the new F/L PLATE specified in the Fig. 2-18-1.
2. Apply GREASE (MOLYKOTE G PASTE) [859D055O50] to the points on the new F/L PLATE specified in the Fig. 2-18-1.

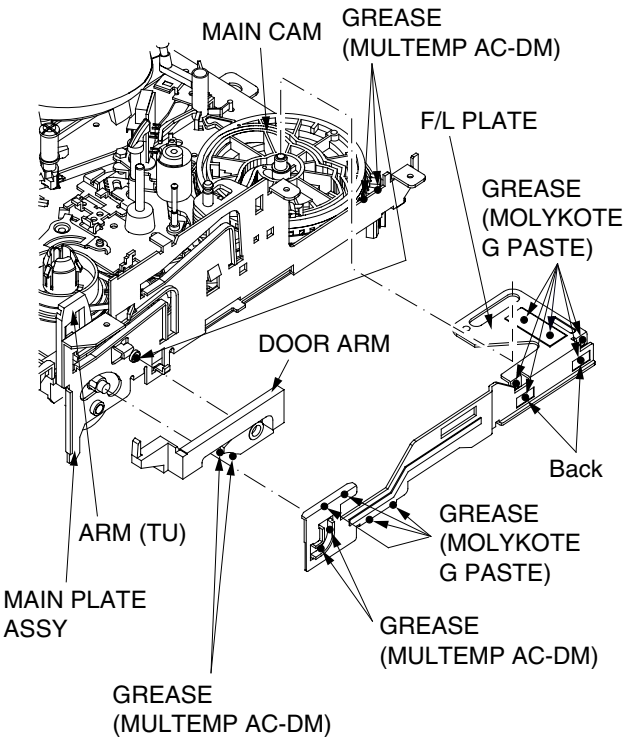


Fig. 2-18-1

3. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the points on the MAIN PLATE ASSY specified in the Fig. 2-18-1.
4. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the points on the DOOR ARM specified in the Fig. 2-18-1.
5. Install the DOOR ARM.
6. Match the Hole in the MAIN CAM with the Hole in the MAIN PLATE ASSY shown in the Fig. 2-18-2.
7. Install the F/L PLATE shown in the Fig. 2-18-1 from the front side (ARM (TU) side).
8. Insert the Boss of the F/L PLATE shown in the Fig. 2-18-2 into the Groove of the MAIN CAM.

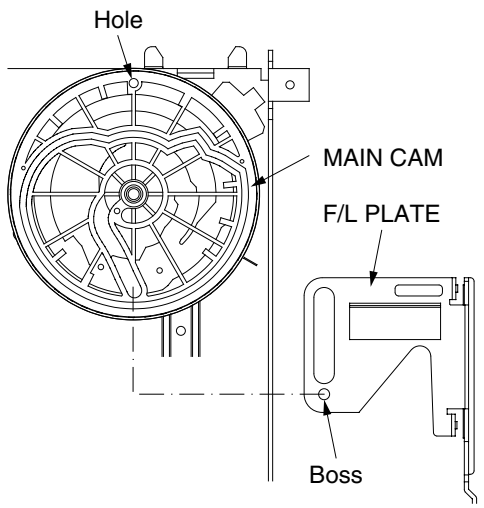


Fig. 2-18-2

2-19. BRAKE CAM PLATE

SET POSITION : Normal

Remove the following parts before replacing the BRAKE CAM PLATE. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)

(Removal)

1. Rotate the MAIN CAM in the Fig. 2-19-1 in the direction shown by the arrow Ⓐ. And move the BRAKE CAM PLATE so that the three catches (ⓐ) of the MAIN PLATE ASSY can be released.
2. Remove the BRAKE CAM PLATE.

(Installation)

1. Apply GREASE (MOLYKOTE G PASTE) [859D055O50] to the points on the BRAKE CAM PLATE specified in the Fig. 2-19-2.
2. Hook the BRAKE SPRING shown in the Fig. 2-19-3 to the catch of the BRAKE (TU).
3. Install the BRAKE CAM PLATE, inserting the six Guide Pins (ⓑ) shown in the Fig. 2-19-1 into the slits of the BRAKE CAM PLATE.
4. Move the BRAKE SPRING in the Fig. 2-19-3 in the direction of the arrow Ⓒ to release the Catch of the BRAKE (TU) and insert the BRAKE SPRING under the Catch.
5. Rotate the MAIN CAM shown in the Fig. 2-19-1 in the direction shown of the arrow Ⓑ. And move the BRAKE CAM PLATE to hook it to the three catches (ⓐ) of the MAIN PLATE ASSY.

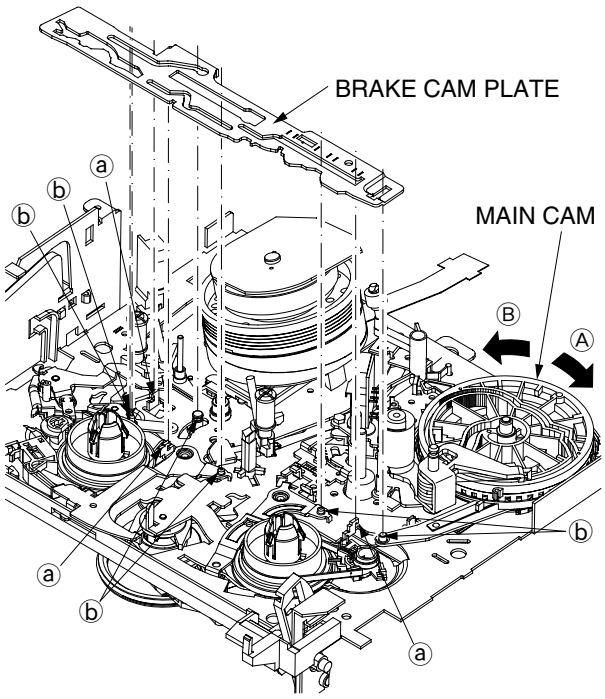
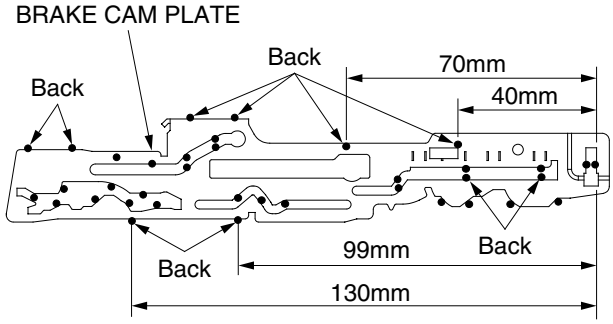


Fig. 2-19-1



Apply GREASE (MOLYKOTE G PASTE) to the points ●.

Fig. 2-19-2

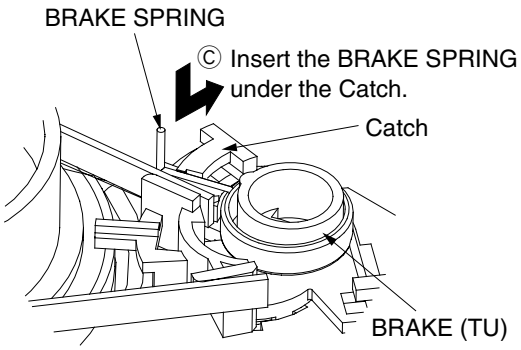


Fig. 2-19-3

2-20. GUIDE LAMP

SET POSITION : Normal

Remove the following parts before replacing the GUIDE LAMP. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)

(Removal)

1. Release the catch (ⓐ) of the GUIDE LAMP shown in the Fig. 2-20.
2. Rotate the GUIDE LAMP in the direction shown by the arrow Ⓐ (counterclockwise, when viewed from the bottom) to match the longest slit (ⓒ) of the MAIN PLATE ASSY with the longest arm (ⓑ) of the GUIDE LAMP shown in the Fig. 2-20. Pull it out downward to remove it.

(Installation)

1. Clean the dirt on the GUIDE LAMP with a VIDEO HEAD cleaning cloth.

Note: Never use solvent such as alcohol to clean the GUIDE LAMP.

2. Insert the GUIDE LAMP in the Fig. 2-20, matching the longest arm (ⓑ) of the GUIDE LAMP with the longest slit (ⓒ) of the MAIN PLATE ASSY.
3. Rotate the GUIDE LAMP in the direction shown by the arrow Ⓑ (clockwise, when viewed from the bottom) to match the arm (ⓐ) of the GUIDE LAMP shown in the Fig. 2-20 with the longest slit (ⓒ) of the MAIN PLATE ASSY.

Note : Clean the dirt on the GUIDE LAMP with a VIDEO HEAD cleaning cloth if necessary.

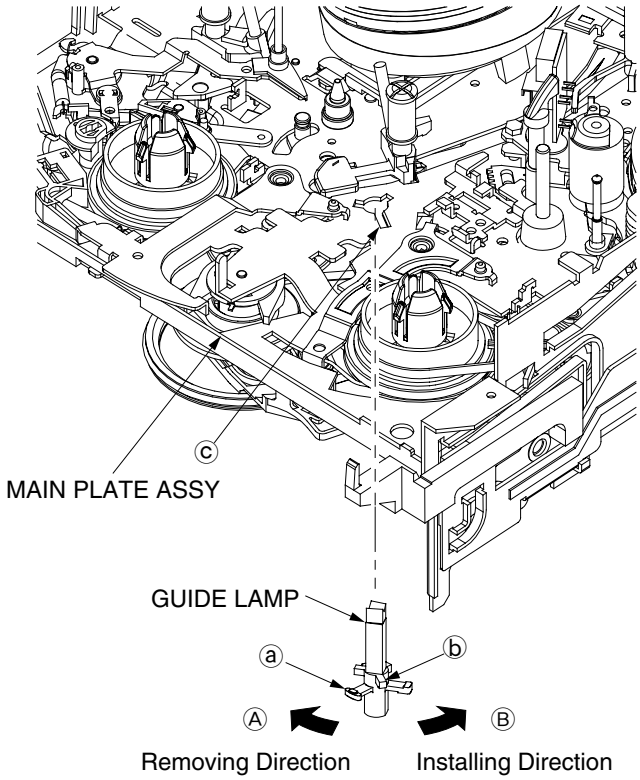


Fig. 2-20

2-21. MAIN CAM, GUIDE ARM (TU), BRAKE LEVER

SET POSITION : Normal

Remove the following parts before replacing the MAIN CAM, GUIDE ARM (TU), BRAKE LEVER. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- SENSOR COVER (TU) (Item 2-10)
- MOTOR HOLDER (Item 2-16)
- WORM WHEEL (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- F/L PLATE (Item 2-18)

(Removal)

1. Remove the MAIN CAM shown in the Fig. 2-21-1.
2. Remove the GUIDE ARM (TU) shown in the Fig. 2-21-1.
3. Move the BRAKE LEVER in the Fig. 2-21-1 in the direction shown by the arrow Ⓐ and release the catch (ⓐ) to remove the BRAKE LEVER.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the points on the new GUIDE ARM (TU) specified in the Fig. 2-21-1.
2. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the points on the MAIN PLATE ASSY specified in the Fig. 2-21-1.
3. Install the GUIDE ARM (TU), matching the Hole in the GUIDE ARM (TU) shown in the Fig. 2-21-2 with the Hole in the MAIN PLATE ASSY.

Note : Install the GUIDE ARM (TU) so that the Part specified with the Oblique Lines of the GUIDE ARM (TU) will be under the SHAFT FLANGE of the PINCH UNIT.

4. Install the BRAKE LEVER shown in the Fig. 2-21-2 so that the Hole in the BRAKE LEVER overlaps the Hole in the MAIN PLATE ASSY.
5. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the points on the new MAIN CAM specified in the Fig. 2-21-3.
6. Install the MAIN CAM so that the Hole in the MAIN CAM shown in the Fig. 2-21-2 overlaps with the Hole in the MAIN PLATE ASSY.

Note : Install the MAIN CAM inserting the Pins of the CAPSTAN BRAKE ASSY, GUIDE ARM (TU), BRAKE LEVER into the Grooves on the back of the MAIN CAM for sure.

Set the Main Cam while pulling the Guide Pin (on the CAPSTAN BRAKE ASSY) in the direction indicated by the arrow Ⓑ (toward the deck front) using tweezers as shown in Fig. 2-21-1.

Be careful that GREASE does not adhere on the Wall when applying GREASE to the most external circle on the back of the MAIN CAM (4 parts) shown in the Fig. 2-21-3.

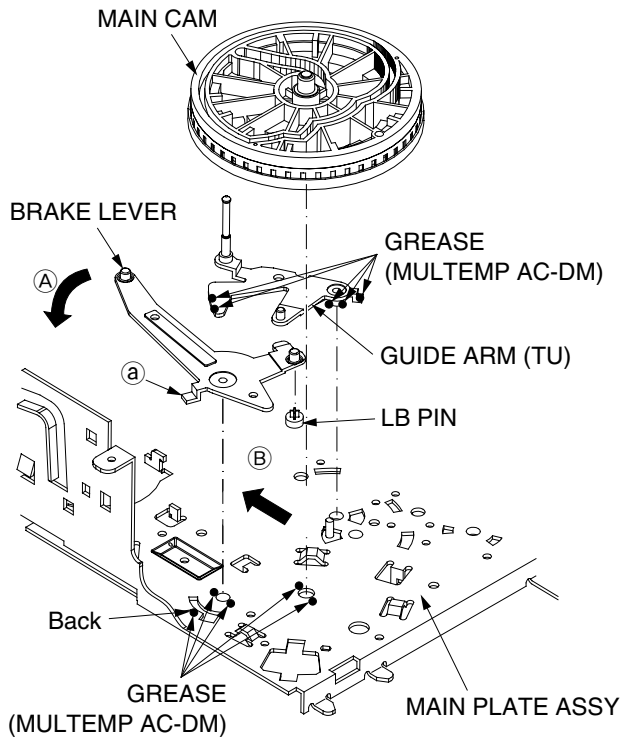


Fig. 2-21-1

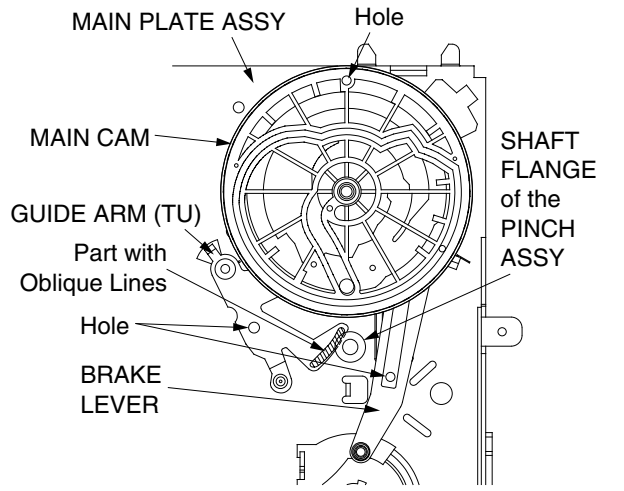
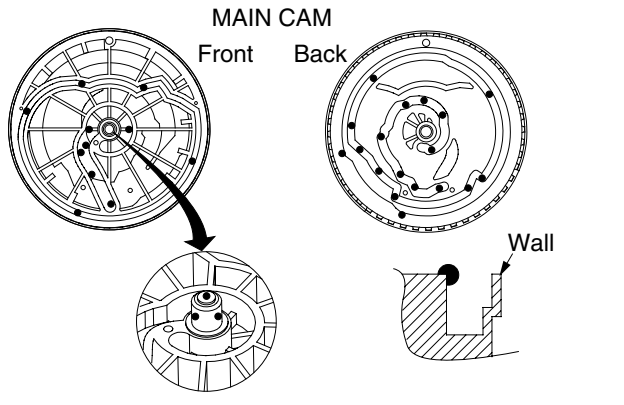


Fig. 2-21-2



Apply GREASE (MULTEMP AC-DM) to the parts ●.

Fig. 2-21-3

2-22. L/D LOCK LEVER

SET POSITION : Normal

Remove the following parts before replacing the L/D LOCK LEVER. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)

(Removal)

1. Remove the L/D LOCK LEVER shown in the Fig. 2-22.

(Installation)

1. Install the L/D LOCK LEVER shown in Fig. 2-22.

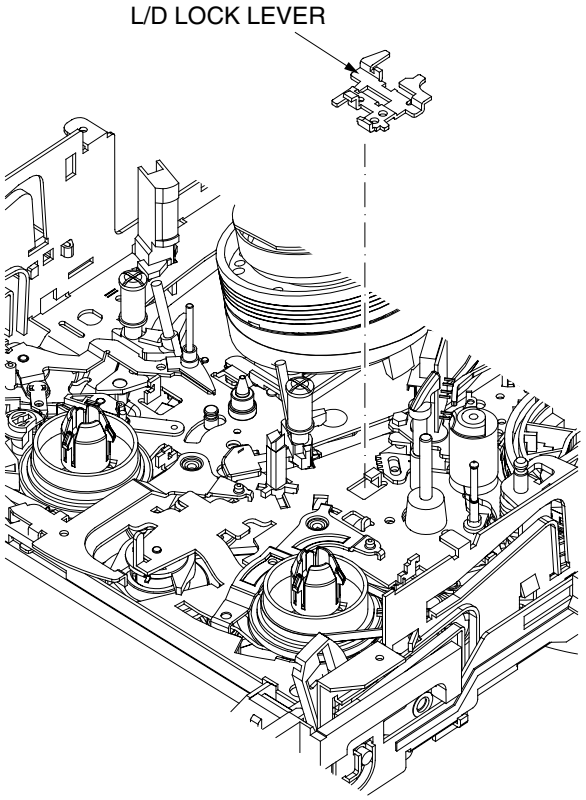


Fig. 2-22

2-23. BRAKE BELT (SP), BELT HOLDER

SET POSITION : Normal

Remove the following parts before replacing the BRAKE BELT (SP), BELT HOLDER. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)

(Removal)

1. Lift the BRAKE BELT (SP) shown in the Fig. 2-23 to remove it from the REEL DISK (SP side).
2. Release the BRAKE BELT (SP) from the catch (ⓐ) of the BELT LEVER shown in the Fig. 2-23.
3. Release the two catches (ⓑ) of the BELT HOLDER shown in the Fig. 2-23 and separate the BELT HOLDER from the BRAKE BELT (SP).
4. Release the catch (ⓒ) of the BELT HOLDER shown in the Fig. 2-23 to remove the BRAKE BELT (SP).

(Installation)

Note : Install the BRAKE BELT (SP) so that its Felt Side touches the REEL DISK (SP side). GREASE applied to the BRAKE CAM PLATE and MAIN PLATE ASSY should not adhere on the Felt Side of the BRAKE BELT (SP).

1. Install the BRAKE BELT (SP) shown in the Fig. 2-23 to the catch (ⓒ) of the BELT HOLDER.
2. Install the BELT HOLDER shown in the Fig. 2-23.
3. Install the BRAKE BELT (SP) shown in the Fig. 2-23 to the catch (ⓐ) of the BELT LEVER.
4. Hook the BRAKE BELT (SP) shown in the Fig. 2-23 to the REEL DISK (SP side).

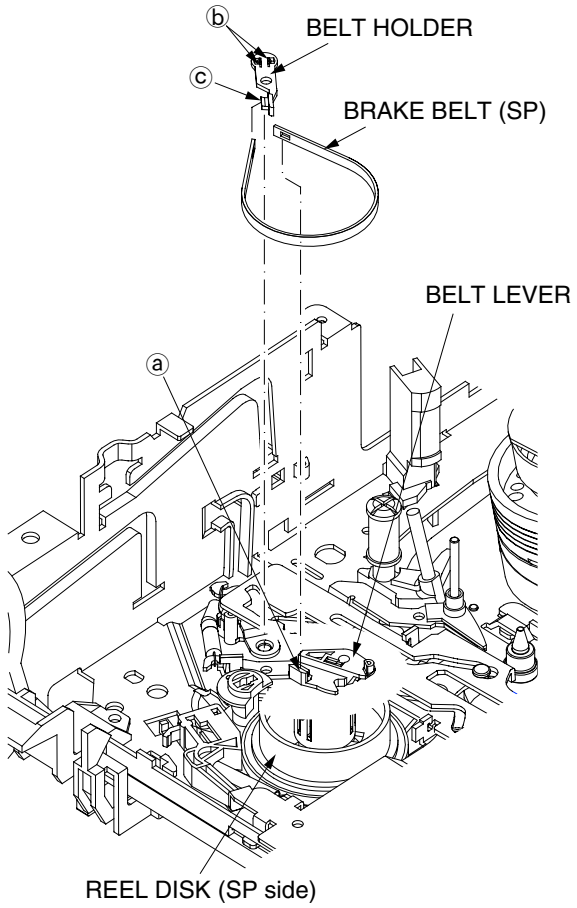


Fig. 2-23

2-24. BELT LEVER, BELT ADJUSTER

SET POSITION : Normal

Remove the following parts before replacing the BELT LEVER, BELT ADJUSTER. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)
- BRAKE BELT (SP) (Item 2-23)
- BELT HOLDER (Item 2-23)

(Removal)

1. Release the catch (ⓐ) of the BELT LEVER shown in the Fig. 2-24 to remove the BELT LEVER.
2. Remove the BELT ADJUSTER shown in the Fig. 2-24.

(Installation)

1. Install the BELT ADJUSTER shown in the Fig. 2-24.
2. Install the BELT LEVER shown in the Fig. 2-24.

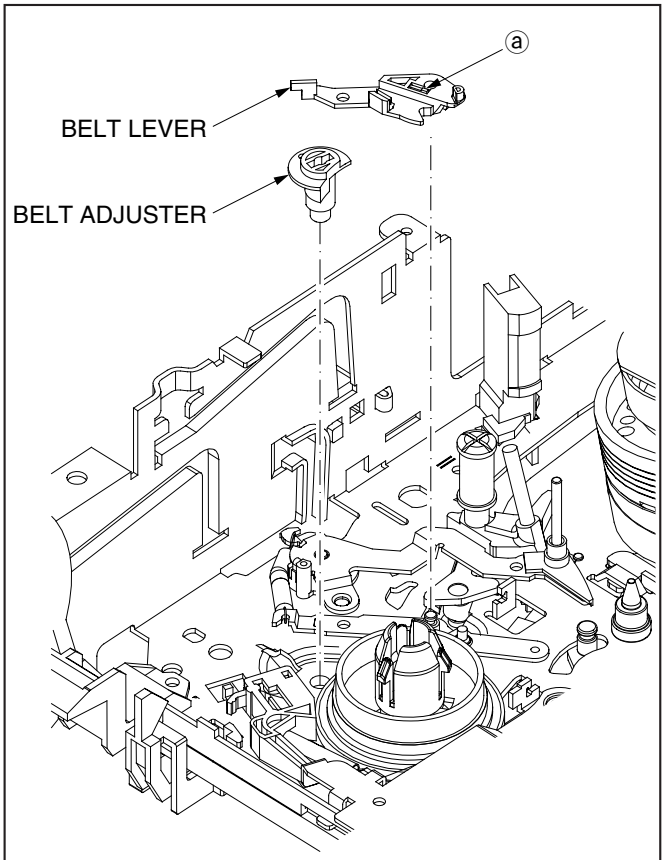


Fig. 2-24

2-25 TENSION ARM, TENSION LEVER, TENSION SPRING, TENS AXIS HOLDER, REEL DISK (SP side)

SET POSITION : Normal

Remove the following parts before performing this Item. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)
- BRAKE BELT (SP) (Item 2-23)
- BELT HOLDER (Item 2-23)
- BELT LEVER (Item 2-24)

(Removal)

1. Remove the TENSION SPRING shown in the Fig. 2-25.
2. Release the catch (ⓐ) of the TENS AXIS HOLDER shown in the Fig. 2-25 to remove the TENSION ARM.
3. Remove the TENSION LEVER shown in the Fig. 2-25.
4. Release the catch (ⓑ) of the TENS AXIS HOLDER shown in the Fig. 2-25. Move the TENS AXIS HOLDER in the direction shown by the arrow Ⓐ to remove it.
5. Remove the REEL DISK (SP side).

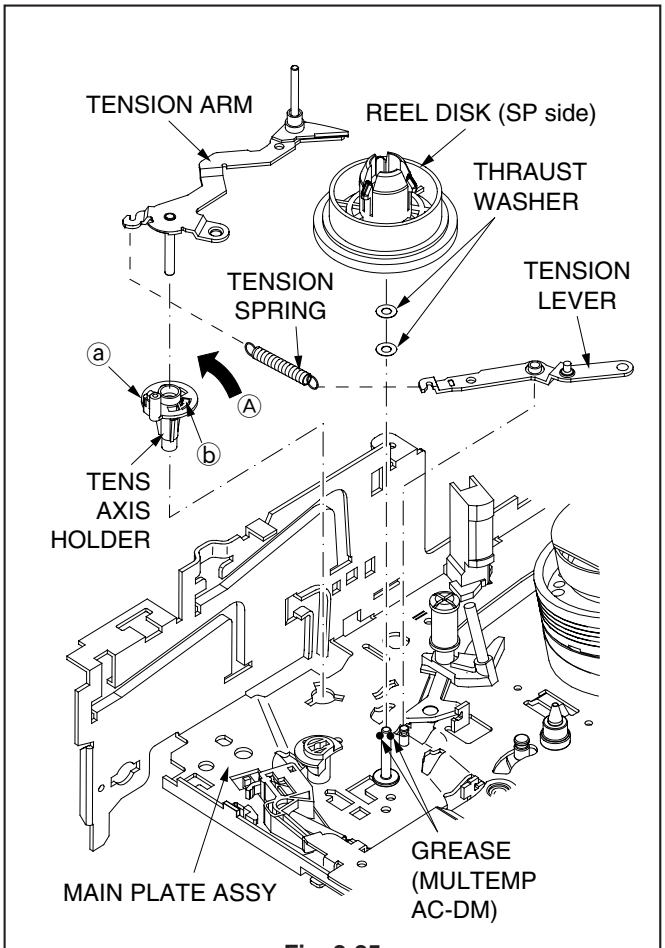


Fig. 2-25

(Installation)

1. Apply GREASE (MULTEMP AC-DM) [859D055O90] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-25.
2. Install the REEL DISK (SP side).
3. Install the TENS AXIS HOLDER.

Note : Install the TENS AXIS HOLDER so that the catch (ⓐ) for the TENSION ARM will be positioned on the front (F/L ARM ASSY side).

4. Install the TENSION LEVER.
5. Install the TENSION ARM.
6. Install the TENSION SPRING.

Note : Install the longer hook of the TENSION SPRING to the TENSION ARM.

2-26. BRAKE BELT (TU)

SET POSITION : Normal

Remove the following parts before replacing the BRAKE BELT. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)

(Removal)

1. Lift the BRAKE BELT (TU) shown in the Fig. 2-26 to remove it from the REEL DISK (TU side).
2. Release the two catches (ⓐ) of the BRAKE (TU) shown in the Fig. 2-26 to remove the BRAKE BELT (TU).

(Installation)

1. Install the BRAKE BELT (TU) shown in the Fig. 2-26 to the BRAKE (TU).
2. Hook the BRAKE BELT (TU) shown in the Fig. 2-26 to the REEL DISK (TU side).

Note : Install the BRAKE BELT (TU) so that its Felt Side touches the REEL DISK (TU side).

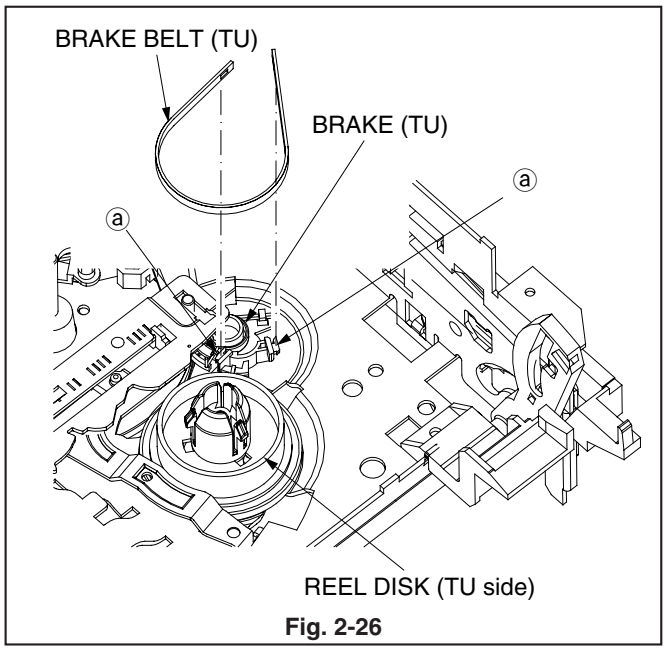


Fig. 2-26

2-27. BRAKE (TU), REEL DISK (TU side)

SET POSITION : Normal

Remove the following parts before replacing the BRAKE (TU), REEL DISK (TU side). Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)

(Removal)

1. Move the BRAKE (TU) in the Fig. 2-27 in the direction shown by the arrow Ⓐ to remove it.
2. Remove the BRAKE BELT (TU) from the BRAKE (TU).
3. Remove the REEL DISK (TU).

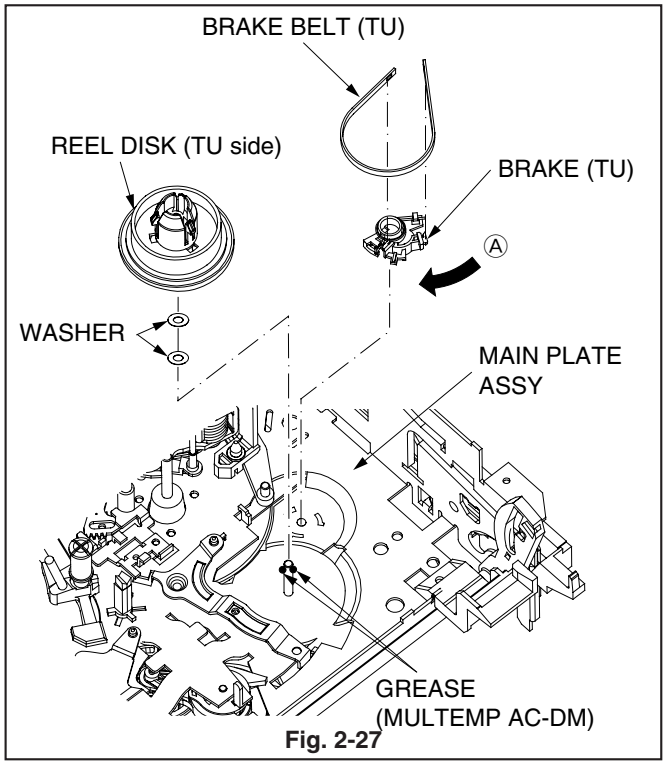


Fig. 2-27

(Installation)

Note : Install the BRAKE BELT (TU) so that its Felt Side touches the REEL DISK (TU side).
The GREASE applied to the BRAKE CAM PLATE and the MAIN PLATE ASSY should not adhere on the Felt Side of the BRAKE BELT (SP).

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-27.
2. Install the REEL DISK (TU side).
3. Install the BRAKE BELT (TU) to the BRAKE (TU).
4. Install the BRAKE (TU).
5. Hook the BRAKE BELT (TU) to the REEL DISK (TU side).

2-28. SHIFT LEVER

SET POSITION : Normal

Remove the following parts before replacing the SHIFT LEVER. Refer to the corresponding items to install them.

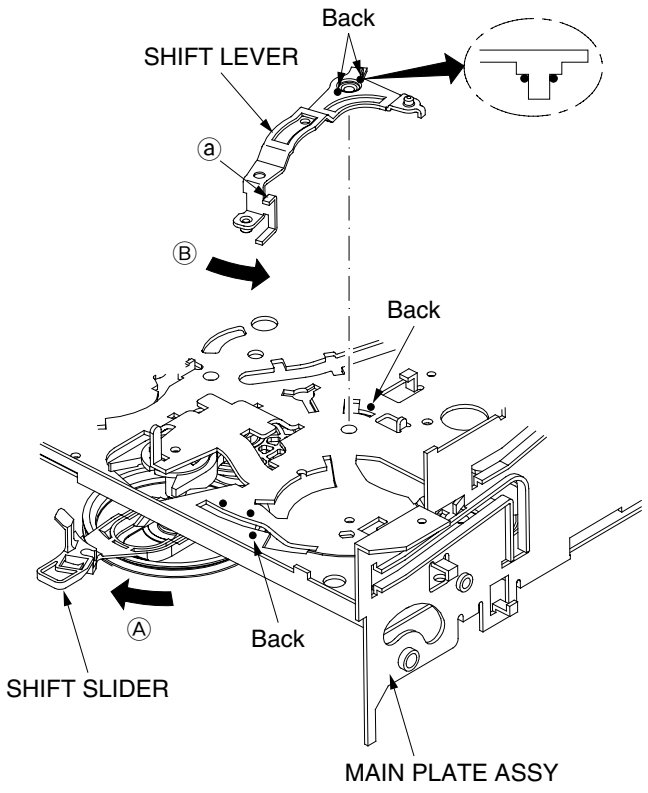
- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)
- BRAKE (TU) (Item 2-27)
- REEL DISK (TU side) (Item 2-27)

(Removal)

1. Move the SHIFT SLIDER in the Fig. 2-28 in the direction shown by the arrow Ⓐ to release it from the SHIFT LEVER.
2. Move the SHIFT LEVER in the Fig. 2-28 in the direction shown by the arrow Ⓑ to remove it.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the parts on the new SHIFT LEVER specified in the Fig. 2-28.
2. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-28.
3. Install the SHIFT LEVER so that its Part (ⓐ) shown in the Fig. 2-28 will be positioned under the MAIN PLATE ASSY.
4. Install the SHIFT SLIDER to the SHIFT LEVER.



Apply GREASE (MULTEMP AC-DM) to the parts ● .

Fig. 2-28

2-29. CHARGE SPRING, SWING LEVER, CHARGE ASSY

SET POSITION : Normal

Remove the following parts before replacing the CHARGE SPRING, SWING LEVER, CHARGE ASSY. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)

(Removal)

1. Remove the CHARGE SPRING shown in the Fig. 2-29 from the SWING LEVER.
2. Remove the SWING LEVER shown in the Fig. 2-29.
3. Release the Part ⓐ of the CHARGE ASSY shown in the Fig. 2-29 from the Part ⓑ of the MAIN PLATE ASSY to remove the CHARGE ASSY.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-29.
2. Install the CHARGE ASSY.
3. Install the SWING LEVER inserting the Part ⓒ of the SWING LEVER in the Fig. 2-29 into the groove in the MAIN PLATE ASSY.
4. Install the CHARGE SPRING to the SWING LEVER.

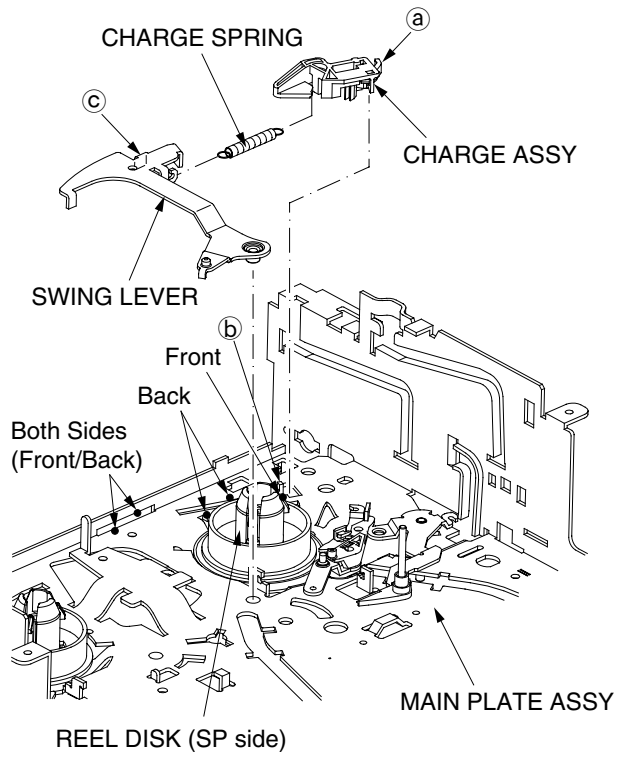


Fig. 2-29

2-30. LOADING ARM ASSY (SP), LOADING ARM ASSY (TU)

SET POSITION : Upside down

(Removal)

1. Release the catch (ⓐ) of the LOADING ARM ASSY (SP) shown in the Fig. 2-30-1 to remove the LOADING ARM ASSY (SP).

Note : Be sure to replace the removed LOADING ARM ASSY (SP) with a new one.

2. Remove the screw (ⓑ) fastening the SPACER PLATE shown in the Fig. 2-30-1 to remove the SPACER PLATE.
3. Remove the LOADING ARM ASSY (TU) shown in the Fig. 2-30-1.

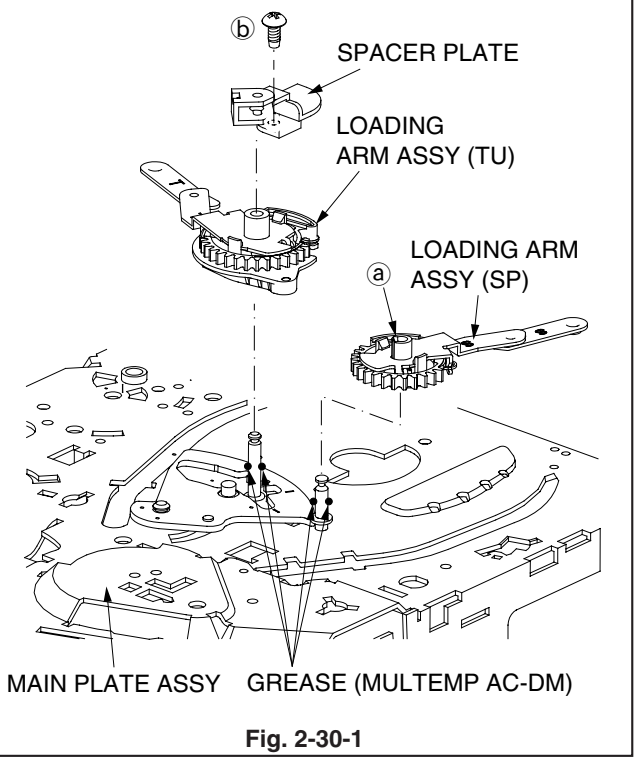
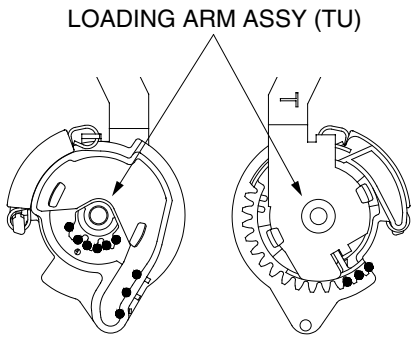


Fig. 2-30-1

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-30-1.
2. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the parts on the LOADING ARM ASSY (TU) specified in the Fig. 2-30-2.
3. Install the LOADING ARM ASSY (SP) and LOADING ARM ASSY (TU) so that the Marks on the both UNITs face each other, as shown in the Fig. 2-30-3.

Note : Be sure to replace the removed LOADING ARM ASSY (SP) with a new one.



Apply GREASE (MULTEMP AC-DM) to the parts ●.

Fig. 2-30-2

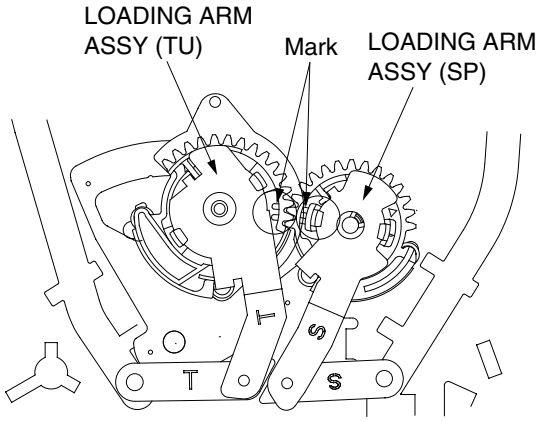


Fig. 2-30-3

2-31. A/L LEVER

SET POSITION: Upside down

Remove the following parts before replacing the A/L LEVER. Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)
- LOADING ARM ASSY (SP) (Item 2-30)
- LOADING ARM ASSY (TU) (Item 2-30)

(Removal)

1. Remove the CUT WASHER and WASHER shown in the Fig. 2-31-1. Then, remove the A/L LEVER.

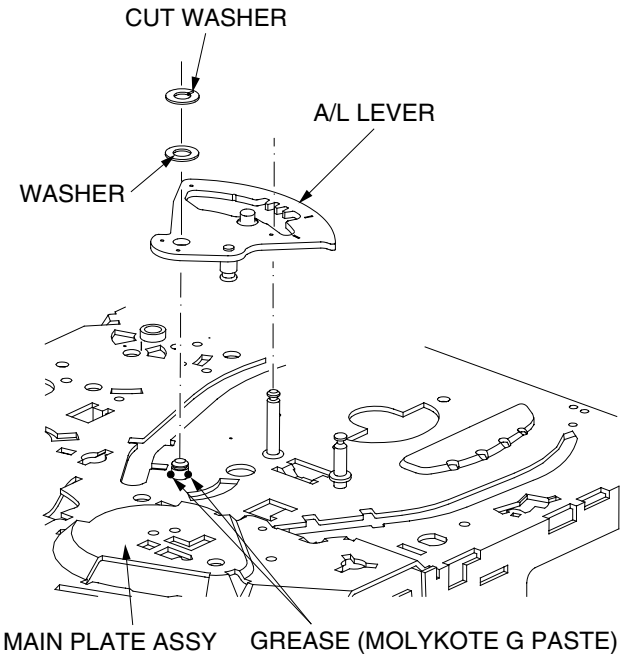


Fig. 2-31-1

(Installation)

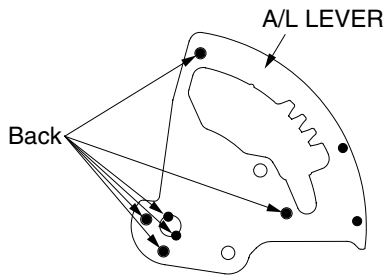
Note : Install the LOADING ARM ASSY (TU) and LOADING ARM ASSY (SP), according to the following procedure, after installing the A/L LEVER.

1. Apply GREASE (MOLYKOTE G PASTE) [859D055O50] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-31-1.
2. Apply GREASE (MOLYKOTE G PASTE) [859D055O50] to the parts on the A/L LEVER specified in the Fig. 2-31-2.
3. Install the A/L LEVER so that the Mark on the A/L LEVER faces to the FLANGE of the LOADING ARM ASSY (SP), as shown in the Fig. 2-31-3.

Note : The Part specified with Oblique Lines on the A/L LEVER should be under the FLANGE of the LOADING ARM ASSY (SP).

4. Install the LOADING ARM ASSY (TU) so that the Marks on the LOADING ARM ASSY (TU) and on the A/L LEVER will face each other, as shown in the Fig. 2-31-4.
5. Install the LOADING ARM ASSY (SP) so that the ▲ mark on the LOADING ARM ASSY (SP) and the Reinforcement Rib of the LOADING ARM ASSY (TU) will face each other, as shown in the Fig. 2-31-4.

Note : Be sure to replace the removed LOADING ARM ASSY (SP) with a new one.



Apply GREASE (MOLYKOTE G PASTE) to the parts ● .

Fig. 2-31-2

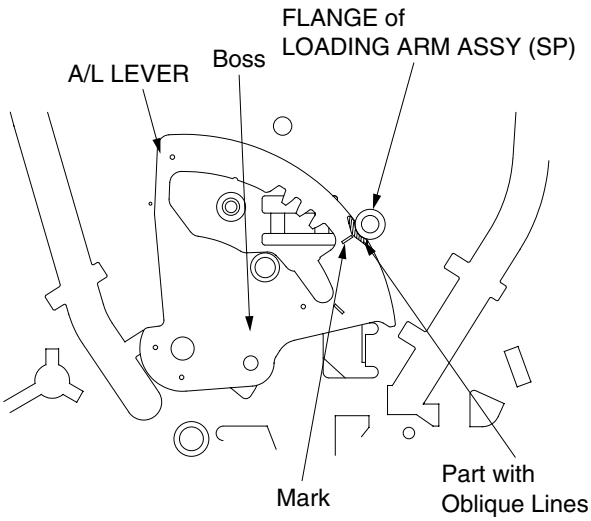


Fig. 2-31-3

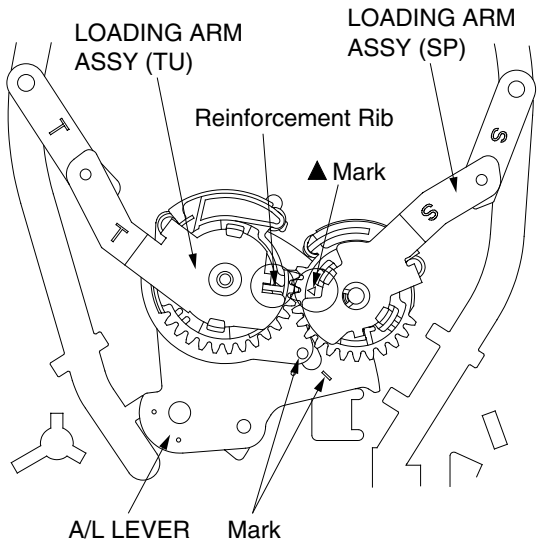


Fig. 2-31-4

2-32. TAPE GUIDE ASSY (SP), TAPE GUIDE ASSY (TU)

SET POSITION : Normal

Remove the following parts before replacing the TAPE GUIDE ASSY (SP), (TU). Refer to the corresponding items to install them.

- STAY PLATE (Item 2-2)
- BOTTOM ASSY (Item 2-3)
- MOTOR HOLDER (Item 2-16)
- PINCH ARM CAP (Item 2-17)
- PINCH UNIT (Item 2-17)
- BRAKE CAM PLATE (Item 2-19)
- BRAKE BELT (SP) (Item 2-23)
- BELT HOLDER (Item 2-23)
- BELT LEVER (Item 2-24)
- TENSION ARM (Item 2-25)

(Removal)

1. Loosen the TAPE GUIDE ASSY (SP) shown in the Fig. 2-32-1 (turn it fully in the Unloading direction) to remove it.
2. Loosen the TAPE GUIDE ASSY (TU) shown in the Fig. 2-32-1 (turn it fully in the Unloading direction) to remove it.

(Installation)

1. Apply GREASE (MULTEMP AC-DM)[859D055O90] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-32-2.
2. Install the TAPE GUIDE ASSY (SP) shown in the Fig. 2-32-1.
3. Install the TAPE GUIDE ASSY (TU) shown in the Fig. 2-32-1.
4. Perform the Item 3-2-1. "GUIDE ROLLER Check" to the Item 3-2-5. "Flatness Check of FM Waveform" of the "Interchangeability Adjustment of the Mechanism".

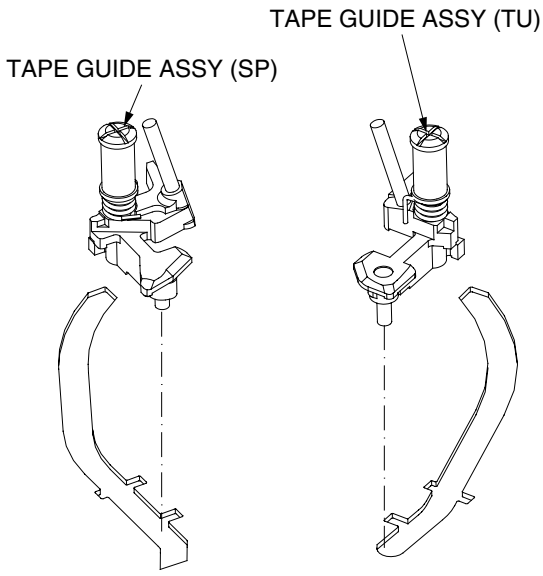
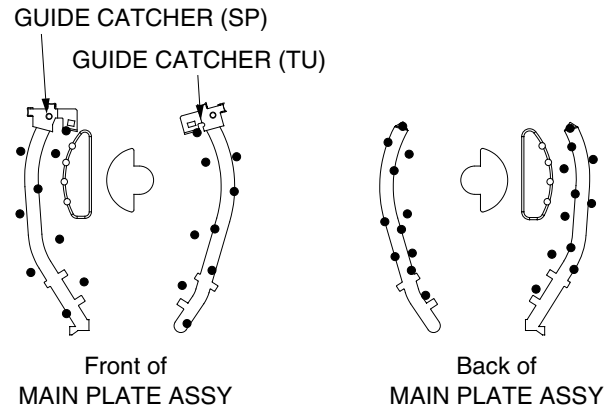


Fig. 2-32-1



Apply GREASE (MULTEMP AC-DM) to the parts ● .

Fig. 2-32-2

2-33. DRUM CLAMPER, DRUM ASSY

SET POSITION : Normal

(Removal)

1. Disconnect the LEAD CONNECTOR of the DRUM ASSY shown in the Fig. 2-33-1.
2. Remove the two screws (ⓐ, ⓑ) fastening the DRUM CLAMPER shown in the Fig. 2-33-1 to remove the DRUM ASSY with the DRUM CLAMPER.
3. Rotate the DRUM CLAMPER in the Fig. 2-33-2 in the direction shown by the arrow Ⓐ to remove it from the DRUM ASSY.

(Installation)

1. Install the DRUM CLAMPER in the Fig. 2-33-2 to the DRUM ASSY by rotating it in the direction shown of the arrow Ⓑ.
2. Hook the Catch of the DRUM CLAMPER shown in the Fig. 2-33-3 to the Reference Pin.
3. Fasten the screw (ⓑ) while pushing the Part Ⓐ in the direction shown by the arrow Ⓒ (clockwise when viewed from the top) as shown in the Fig. 2-33-3.

Note : Confirm at this time that the Catch of the DRUM CLAMPER touches the side of the Reference Pin.

4. Fasten the screw (ⓐ) shown in the Fig. 2-33-3.

Note : Confirm at this time that the Catch of the DRUM CLAMPER touches the side of the Reference Pin.

5. Connect the LEAD CONNECTOR of the DRUM ASSY with the DRUM CLAMPER shown in the Fig. 2-33-1.
6. Connect the LEAD CONNECTOR of the DRUM ASSY shown in the Fig. 2-33-1.
7. Perform the Item "PLAYBACK Switching Point" of the "Circuit Adjustment" in this service manual.
8. Perform the Item "Interchangeability Adjustment of the Mechanism".
9. Clean the DRUM ASSY shown in the Fig. 2-33-1 with alcohol.

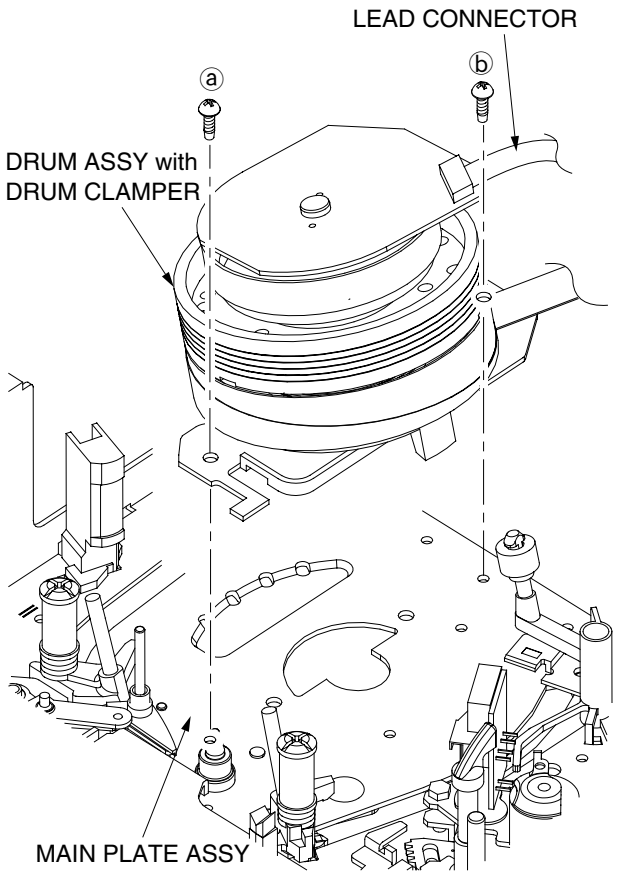


Fig. 2-33-1

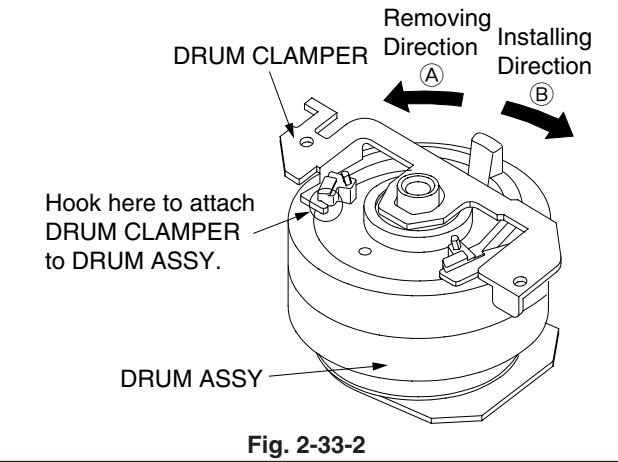


Fig. 2-33-2

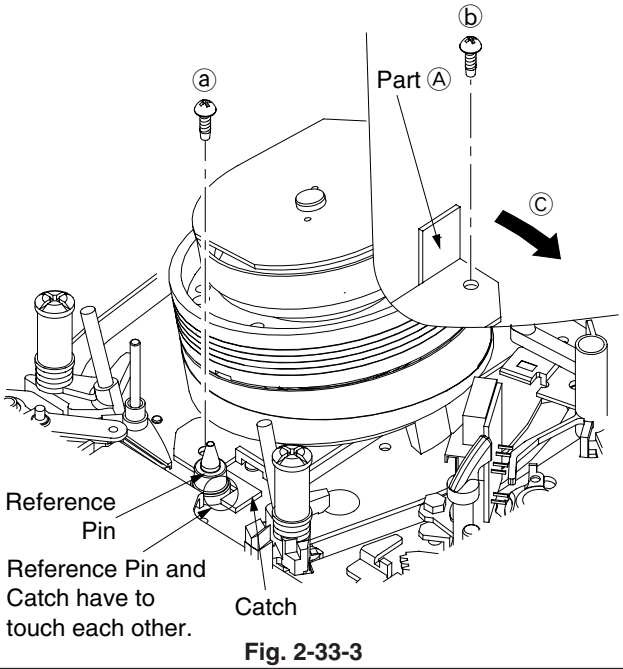


Fig. 2-33-3

2-34. DRUM MOTOR STATOR, BRUSH SPRING, SPACER, ROTOR CASE, END RING, BRUSH, UPPER DRUM ASSY

SET POSITION : Normal

(Removal)

1. Disconnect the LEAD CONNECTOR of the DRUM ASSY shown in the Fig. 2-34-1.
2. Remove the two screws (ⓐ) fastening the DRUM MOTOR STATOR shown in the Fig. 2-34-1 to remove the DRUM MOTOR STATOR.
3. Remove the two screws (ⓑ) fastening the ROTOR CASE shown in the Fig. 2-34-1 to remove the ROTOR CASE.

Note : Mark on the END RING and UPPER DRUM ASSY shown in the Fig. 2-34-1 using a pen, etc. for convenience in installing them.

4. Loosen the hexagon screw (ⓒ) fastening the END RING shown in the Fig. 2-34-1 to remove the END RING.
5. Remove the BRUSH SPRING shown in the Fig. 2-34-1.
6. Remove the BRUSH shown in the Fig. 2-34-1.
7. Remove the UPPER DRUM ASSY shown in the Fig. 2-34-1.
8. Remove the SPACER shown in the Fig. 2-34-1.

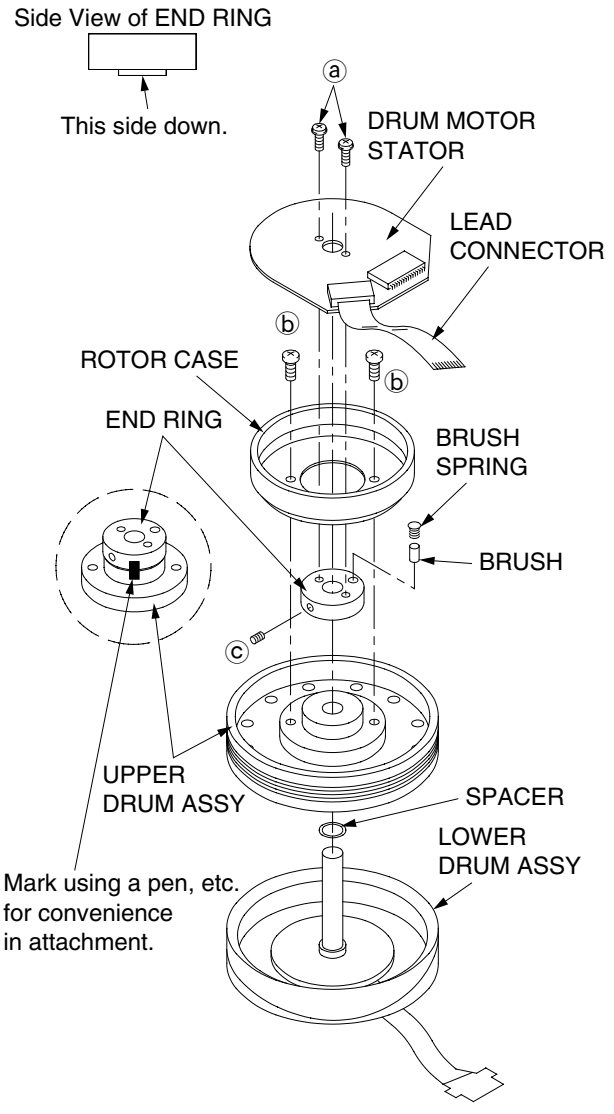


Fig. 2-34-1

(Installation)

1. Install the SPACER shown in the Fig. 2-34-1.

Note : Be sure to use the new SPACER packed with the new UPPER DRUM ASSY.

2. Install the UPPER DRUM ASSY shown in the Fig. 2-34-1.
3. Install the END RING so that the reference hole (Ⓐ) of the END RING shown in the Fig. 2-34-2 will be placed in parallel with the Rear Line of the MAIN PLATE ASSY. (The reference hole (Ⓐ) should be on the right when viewed from the bottom.)
4. Apply the screw-sealing agent to the hexagon screw (ⓒ) fastening the END RING shown in the Fig. 2-34-1.
5. Install the ROTOR CASE shown in the Fig. 2-34-3, matching its Holes with the three reference holes (Ⓑ) of the UPPER DRUM ASSY.
6. Install the BRUSH shown in the Fig. 2-34-1.
7. Install the BRUSH SPRING shown in the Fig. 2-34-1.
8. Install the DRUM MOTOR STATOR shown in the Fig. 2-34-1.
9. Connect the LEAD CONNECTOR of the DRUM ASSY shown in the Fig. 2-34-1.
10. Perform the Item "PLAYBACK Switching Point" adjustment.
11. Perform the Item "Interchangeability Adjustment of the Mechanism".
12. Clean the DRUM ASSY with alcohol.

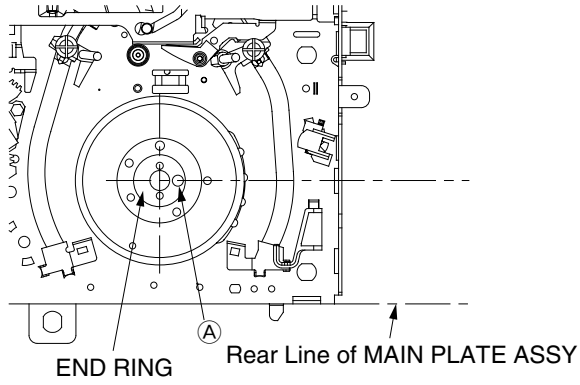


Fig. 2-34-2

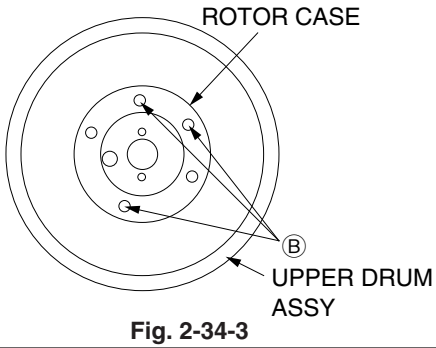


Fig. 2-34-3

2-35. CAPSTAN MOTOR

SET POSITION : Normal

Remove the following part before replacing the CAPSTAN MOTOR. Refer to the corresponding item to install it.

- REEL BELT (Item 2-14.)

(Removal)

1. Rotate the WORM WHEEL in the Fig. 2-35-1 in the direction shown by the arrow Ⓐ to release the Hooks of the BOTTOM ASSY from the Locks of the STAY PLATE.
2. Rotate the WORM WHEEL in the Fig. 2-35-2 in the direction shown by the arrow Ⓐ so that the GUIDE ARM (TU) moves in the direction of arrow Ⓑ and expose the three screws (ⓐ) fastening the CAPSTAN MOTOR.
3. Remove the three screws (ⓐ) fastening the CAPSTAN MOTOR shown in the Fig. 2-35-2 to remove the CAPSTAN MOTOR.

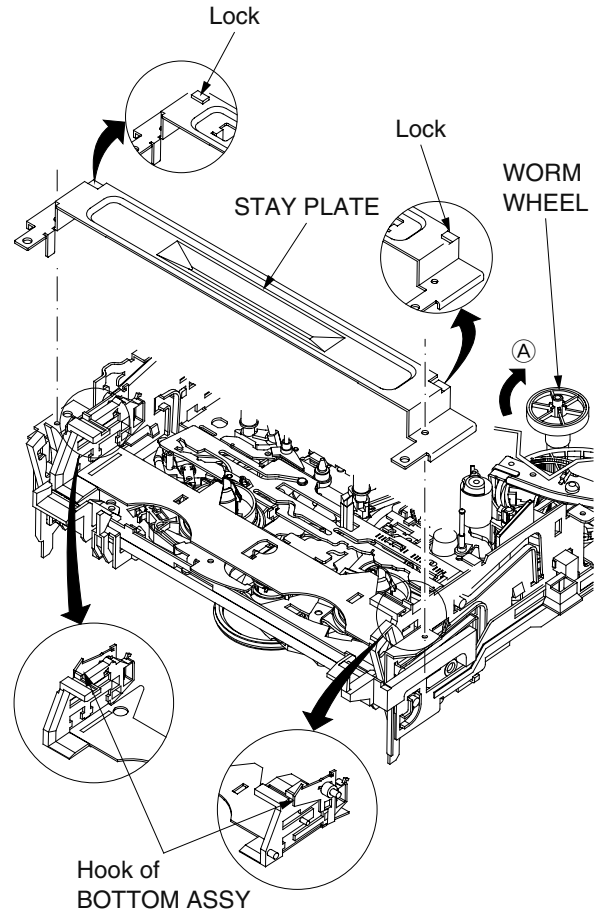


Fig. 2-35-1

(Installation)

1. Apply SILICON COMPOUND (SC102) [859D164O10] to the parts on the MAIN PLATE ASSY specified in the Fig. 2-35-3.
2. Install the CAPSTAN MOTOR.

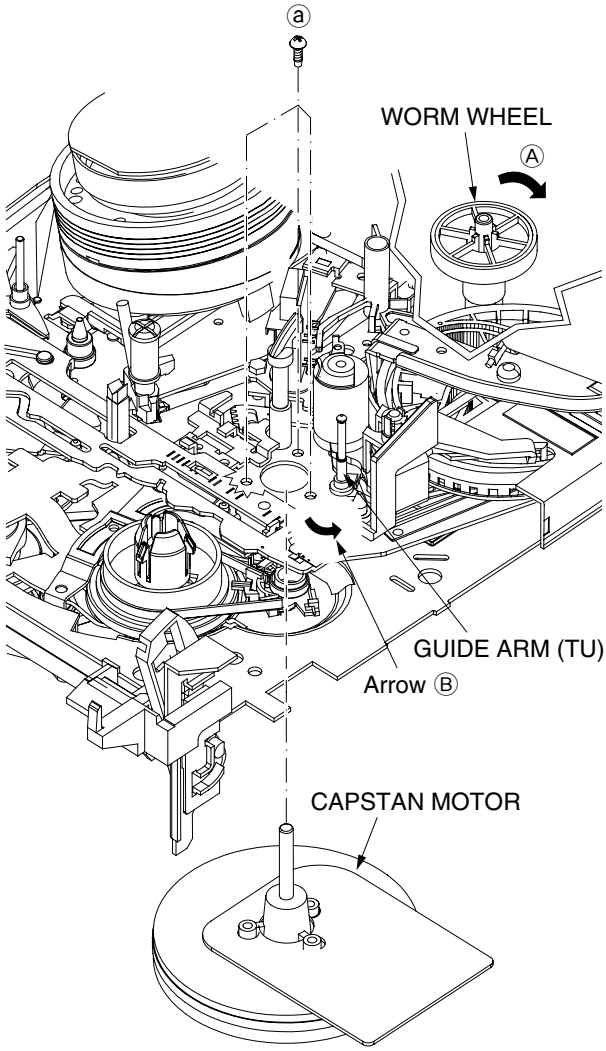


Fig. 2-35-2

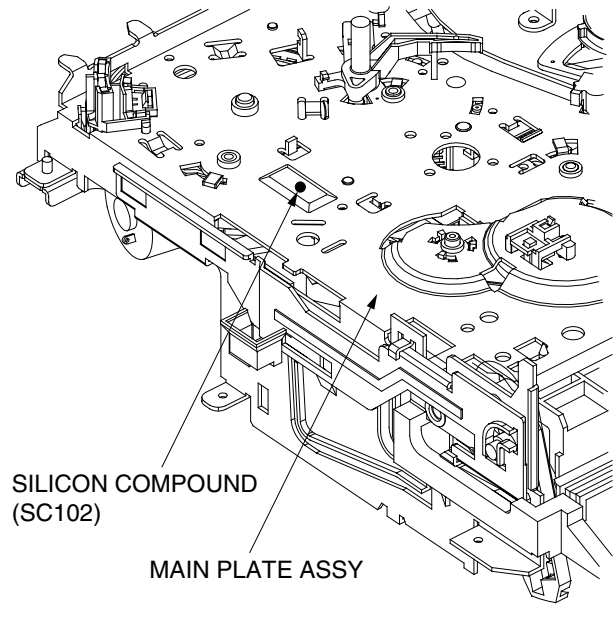


Fig. 2-35-3

2-36. SSW HOLDER, SSW SLIDER

SET POSITION : Upside down

To access the SSW UNIT, remove the following parts :

- STAY PLATE (Para. 2-2)
- BOTTOM ASSY (Para. 2-3)

(Removal)

1. Remove the SSW SLIDER shown in the Fig. 2-36 .
2. Unfasten the two catches (ⓐ) shown in Fig. 2-36, and remove the SSW HOLDER.

(Installation)

1. Install the SSW HOLDER shown in Fig. 2-36.
2. Install the SSW SLIDER shown in Fig. 2-36.

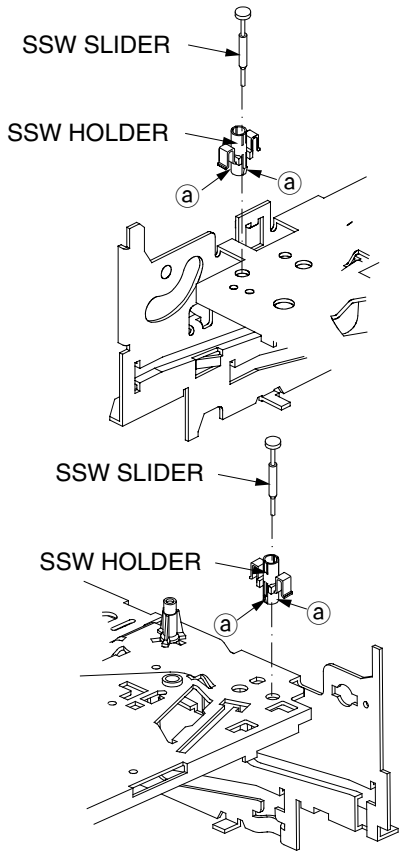


Fig. 2-36

3. Interchangeability Adjustment of the Mechanism

Note 1 : Tracking may need to be preset during interchangeability adjustment of the mechanism. Digital tracking is preset by short circuiting TP5A and TP5B on the PCB-MAIN.

Note 2 : The adjustments are performed in the PLAYBACK mode, using the staircase signal of an alignment tape,unless otherwise specified.Connect an oscilloscope to TP2A and externally trigger from TP2H.

3-1. Adjustment of BACK TENSION and TENSION POLE's Position

Run a Blank Tape for several minutes to break in the REEL DISKs and the Tape Running System before the adjustment.

1. Play back a dummy Tape.
2. Confirm that "A", the distance between the Holes in the TENSION ARM and the MAIN PLATE ASSY shown in the Fig. 3-1-1, is 0.6 ± 0.5mm.
3. If "A" is not 0.6 ± 0.5mm, move the Hole in the BELT ADJUSTER in the Fig. 3-1-2 within the range shown by the arrow Ⓐ to set "A" at 0.3 ± 0.3mm.
4. Set the BACK TENSION measuring jig (Code: 859C345O80) and play-back the tape.
5. Confirm that "A" shown in the Fig. 3-1-1 is 0.0 ± 0.5mm.
6. If "A" is not 0.0 ± 0.5mm at step 5, repeat the adjustment from step 1.
7. Confirm that the indicated value of the BACK TENSION measuring jig is within 55 ± 6 g/cm.

Note 1 : Check the indicated value of the BACK TENSION measuring jig when the tape running condition becomes steady.

Note 2 : Replace the TENSION SPRING if the indicated value exceeds the specified value.

Note 3 : Swing of the finger of the back tension measuring jig within ± gfcm can be ignored.

8. While the tape is running steadily, check visually that the vibration range of the TENSION POLE is 1mm or less. If the vibration range exceeds 1mm, replace the REEL DISK.

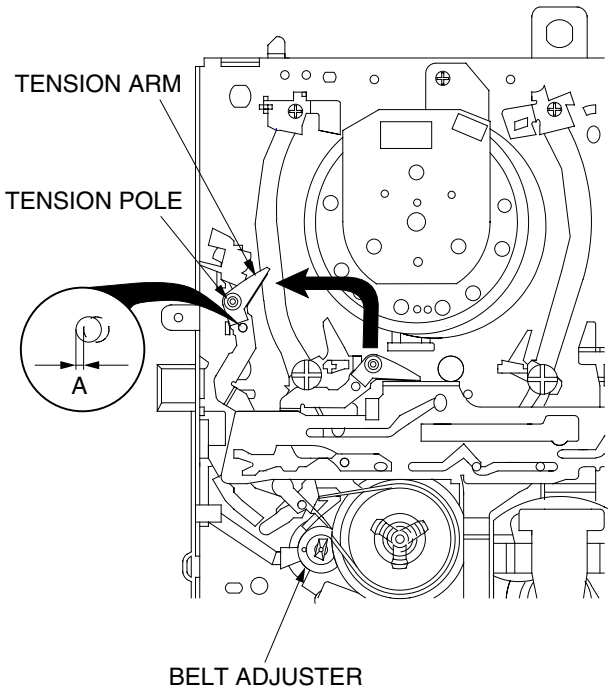


Fig. 3-1-1

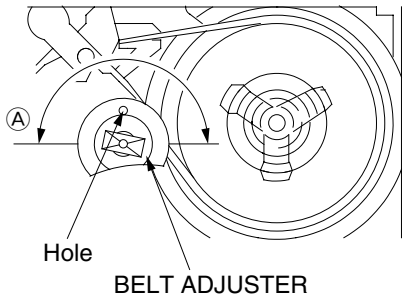


Fig. 3-1-2

3-2. Check and Adjustment of the FM Envelope

3-2-1. GUIDE ROLLER Adjustment check

1. Play back an alignment tape (NM6KE2 : 859C339O90).
2. Preset the tracking.
3. Confirm that the FM Waveform is flat such as in (A).
4. Perform the Item 3-2-2. "Height Adjustment of GUIDE ROLLER (SP) " if the leading edge (the DRUM entry side) of the FM Waveform is not flat (Waveform (B) or (C)). Perform the Item 3-2-3. "Height Adjustment of GUIDE ROLLER (TU)" if the trailing edge (the DRUM exit side) is not flat (Waveform (D) or (E)).

3-2-2. Height Adjustment of GUIDE ROLLER (SP)

1. Loosen the height adjustment screw at the top of the GUIDE ROLLER (SP) so that the GUIDE ROLLER (SP) will rotate smoothly.
2. Observe the leading edge (DRUM entry side) of the FM Waveform. If it looks like (B), the GUIDE ROLLER may be set too low. If it looks like (C), the GUIDE ROLLER may be set too high. To adjust it, turn the height adjustment screw at the top of the GUIDE ROLLER (SP) so that the FM Waveform becomes flat such as in (A).
   - Turn the screw counter-clockwise if the position of the GUIDE ROLLER is lower than specified.
   - Turn the screw clockwise if the position of the GUIDE ROLLER is higher than specified.
3. Perform the Item 3-2-4. "Coarse Adjustment of Phase".

3-2-3. Height Adjustment of GUIDE ROLLER (TU)

1. Loosen the height adjustment screw at the top of the GUIDE ROLLER (TU) so that the GUIDE ROLLER (TU) will rotate smoothly.
2. Observe the trailing edge (DRUM exit side) of the FM Waveform. If it looks like (D), the GUIDE ROLLER may be set too low. If it looks like (E), the GUIDE ROLLER may be set too high. To adjust it, turn the height adjustment screw at the top of the GUIDE ROLLER (TU) so that the FM Waveform becomes flat as in (A).
   - Turn the screw counter-clockwise if the position of the GUIDE ROLLER is too low.
   - Turn the screw clockwise if the position of the GUIDE ROLLER is too high.
3. Perform the Item 3-2-4. "Coarse Adjustment of Phase".

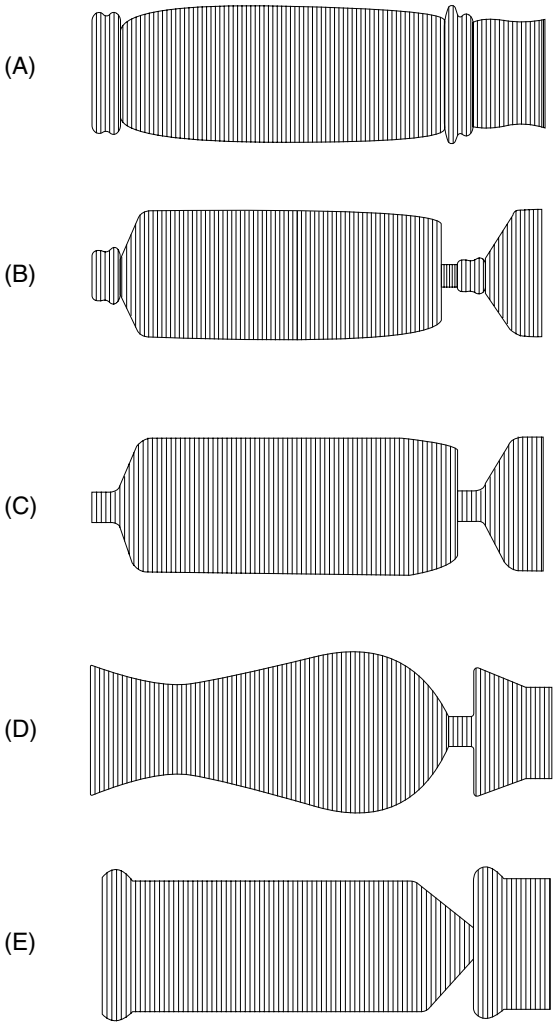


Fig. 3-2-1

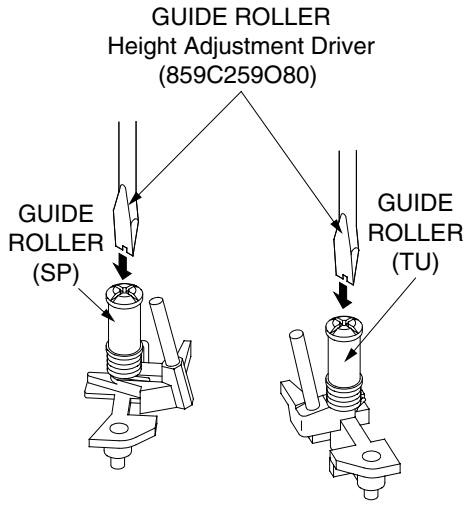


Fig. 3-2-2

3-2-4. Coarse Adjustment of Phase

1. Play back an alignment tape (NM6KE2 : 859C339O90).
2. Preset the tracking.
3. Observe the FM Waveform after performing Item 3-2-1. "GUIDE ROLLER Check".
4. If the amplitude level of the FM Waveform is low such as in (F) in Fig. 3-2-4 set it at the maximum level such as in (G), according to the following procedure.
   Loosen the Screws D and E and insert a screw driver (+) into the Hole in the MAIN PLATE ASSY (Part Ⓐ). Then, move the A/C PLATE to the right and left to set the amplitude level to maximum.
5. Tighten the Screws D and E.

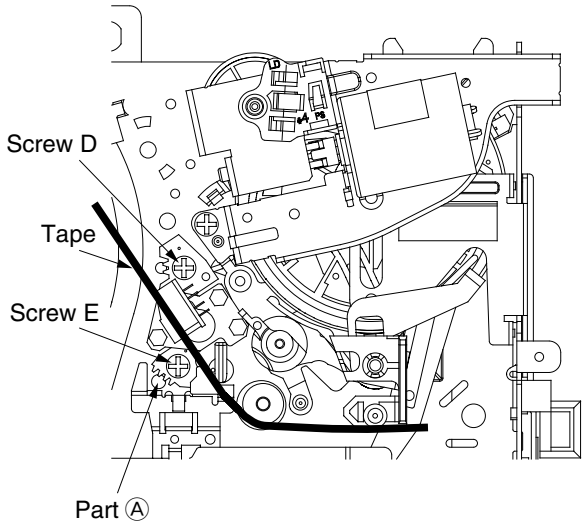


Fig. 3-2-3

3-2-5. Flatness Check of FM Waveform

1. Play back an alignment tape (NM6KE2 : 859C339O90).
2. Adjust the tracking and confirm that the amplitude of the FM signal remains flat.

Note : Adjust the tracking manually, according to the following procedure.
- Press the Channel UP/DOWN button during PLAYBACK for manual tracking adjustment.
- Press the Channel UP and DOWN buttons at the same time to switch the tracking adjustment from "Manual" to "Auto".

3. Adjust the tracking so that the amplitude level of the FM Waveform will be at the maximum. Set the oscilloscope so that the amplitude level of the FM Waveform is 5 divisions on the oscilloscope.
4. Adjust the tracking so that the peak of the FM Output Waveform is 4 divisions. Confirm that the FM Waveforms (B), (C), (D) and (E) are within the range of the specified values in the Fig. 3-2-5.
5. If the Waveforms are out of the specified values in step 4, repeat the Item 3-2. "Check and Adjustment of FM Envelope" from the beginning.

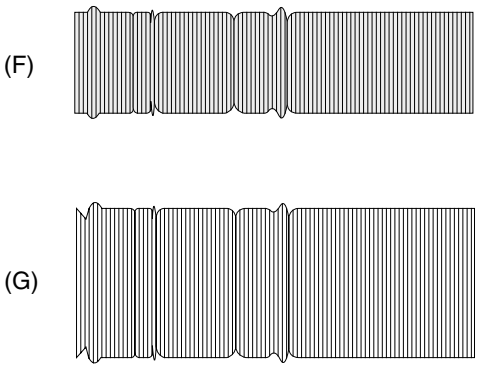
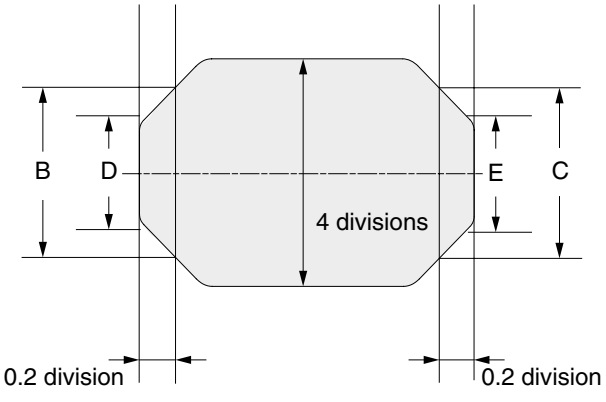


Fig. 3-2-4



	In VHS mode
B, C	2.7 divisions or more
D, E	1.0 division or more

Fig. 3-2-5

3-2-6. Tape Running Condition at the GUIDE ROLLERs (Check 1)

1. Play back an Alignment Tape. [NM6KE2: 859C339O90]
2. Confirm visually that there is a space between the Tape and the Lower FLANGE of the GUIDE ROLLER (SP) and the GUIDE ROLLER (TU).
3. If there is no space in step 2, replace the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU), according to the Item 2-32. "TAPE GUIDE ASSY (SP), TAPE GUIDE ASSY (TU)".
4. Alternately load and unload the tape several times and confirm that the FM Waveform remains flat.
5. If the flatness is affected, check the position of the A/C HEAD. If it is installed incorrectly, correct it according to the Item 2-8. "A/C HEAD UNIT" and repeat Item 3-2-4. "Coarse Adjustment of Phase".

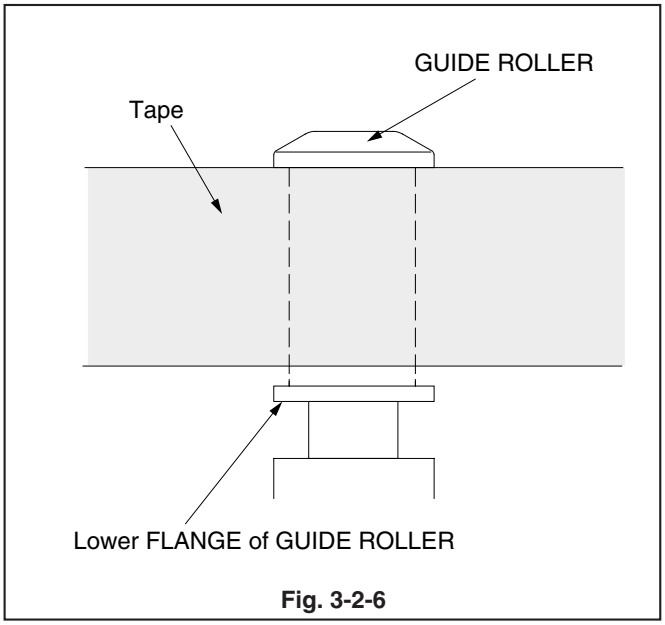


Fig. 3-2-6

3-2-7. Tape Running Condition at the GUIDE ROLLERs (Check 2)

1. Play back an alignment tape (NM6KE2 : 859C339O90).
2. Check that the FM Waveform is quickly restored to the previous level, after lightly pressing and releasing the tops of the GUIDE ROLLER (SP) and GUIDE ROLLER (TU).
3. If the FM Waveform is not restored immediately, replace the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU) according to the Item 2-32. "TAPE GUIDE ASSY (SP), TAPE GUIDE ASSY (TU)".

3-3. A/C HEAD Adjustment

3-3-1. Slant Adjustment of A/C HEAD

1. Play back a blank tape.
2. Slowly turn the slant adjustment Screw C shown in the Fig. 3-3-1 counter-clockwise to slightly crease the bottom of the tape at the Lower FLANGE of the GUIDE POLE (TU).
3. Slowly return the slant adjustment Screw C to remove the crease.
4. Slowly turn the slant adjustment Screw C counter-clockwise again and stop just before the tape is creased.

3-3-2. Azimuth and Height Adjustment of A/C HEAD

1. If the height of the CONTROL HEAD is shifted from the specified value in the Fig. 3-3-2, adjust it with the Height Adjustment Screws A, B and C shown in the Fig. 3-3-1.
2. After adjustment with the Screws A, B or C, repeat the Item 3-3-1. "Slant Adjustment of A/C HEAD".
3. Connect the oscilloscope to the audio output terminal.
4. Play back an alignment tape (NM6KE2 : 859C339O90).
5. Turn the Azimuth Adjustment Screw B in the Fig. 3-3-1 to set the audio output level in the Fig. 3-3-1 at the maximum. After the adjustment, remove the screw driver and confirm that the audio output level is 4.6 divisions or more when the maximum audio output level is set to 5. If the audio output level is less than 4.6, repeat steps 1 ~ 5.
6. Push the A/C HEAD to the right and left (in the direction of A-A' in the Fig. 3-3-1) and release it. And confirm that the audio output level does not change. (Do not push the A/C HEAD until the audio output level is reduced to 3/4 or less of its maximum level.)
7. Confirm that changes in the audio output level are 2dB or less in the PLAYBACK mode.
8. If the change in the audio output level exceeds 2dB, repeat the Item 3-3-1. "Slant Adjustment of A/C HEAD".
9. If the above procedure steps 1 ~ 8 proves to be unsatisfactory, replace the TAPE GUIDE ASSY (SP) and the TAPE GUIDE ASSY (TU), according to the Item 2-32. "TAPE GUIDE ASSY (SP), TAPE GUIDE ASSY (TU)".

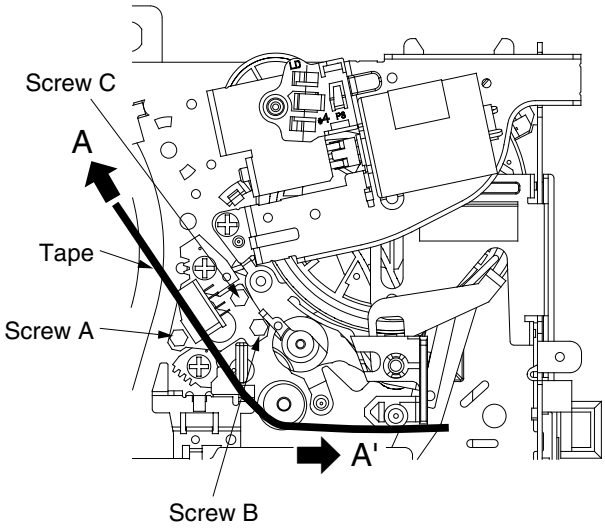


Fig. 3-3-1

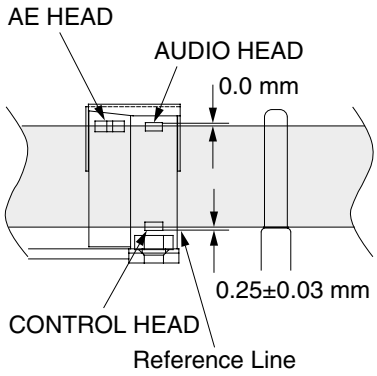


Fig. 3-3-2

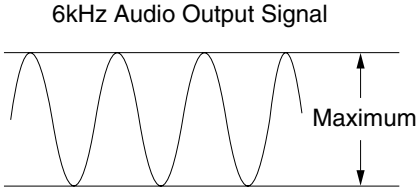


Fig. 3-3-3

3-4. Phase Adjustment

1. Play back an alignment tape (NM3KE6 : 859C339O50).
2. Preset the tracking.
3. Loosen the Screws D and E shown in the Fig. 3-4-1. Insert a screw driver (+) into the Hole in the MAIN PLATE ASSY (Part Ⓐ) and move the A/C PLATE to the right and left to set the amplitude level of the FM Waveform to maximum.
4. Tighten the Screws D and E.
5. Play back an alignment tape [NMX : 859C568O60].
6. Confirm the Missing Portions of the FM Waveform and Audio Waveform are as shown in the Fig. 3-4-2.
7. If the Missing Portions differ from the Fig. 3-4-2, repeat the procedure 3.
8. Adjust the tracking so that the amplitude level of the FM Waveform will be at the maximum. And set the oscilloscope so that the Waveform will be 5 divisions of the oscilloscope.
9. Preset the tracking.
10. Confirm that the FM Waveform on the oscilloscope is 4.8 divisions or more.
11. If the FM Waveform is below 4.8 divisions, preset the tracking and repeat steps 3~10.
12. Push the A/C HEAD to the right and left (in the direction of A-A' in the Fig. 3-4-1) and release it. Confirm that the amplitude of the FM Waveform does not change, compared to before the A/C HEAD was shifted.
13. If the amplitude level of the FM Waveform changes, check the set position of the A/C HEAD. If the A/C HEAD is installed incorrectly, correct the position according to the Item 2-8. "A/C HEAD UNIT" and 3-3. "A/C HEAD Adjustment", and then repeat this item from the beginning.
14. Alternately load and unload the tape several times. Confirm that the amplitude of the FM Waveform does not change.

3-5. Tape wrinkle check

1. Confirm that there is no wrinkle at the lower edge of GUIDE POLE(TU) in PB/FS mode with T-160 tape beginning and ending.
2. Confirm that there is no wrinkle at the upper edge of GUIDE POLE(TU) in RS mode with T-160 tape beginning and ending.

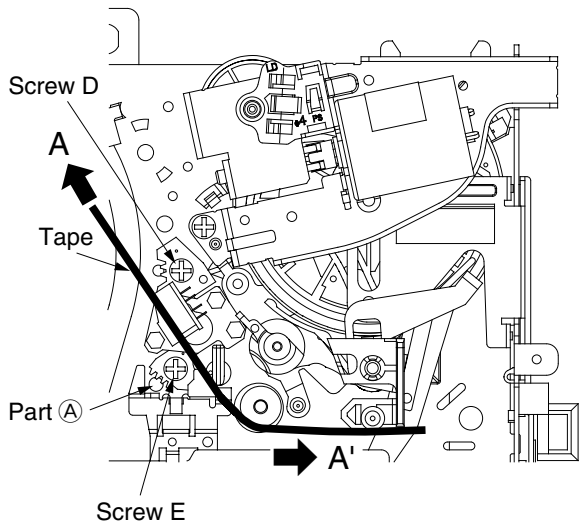


Fig. 3-4-1

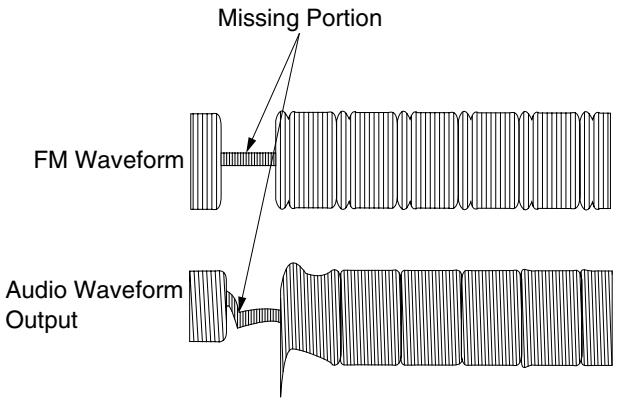


Fig. 3-4-2

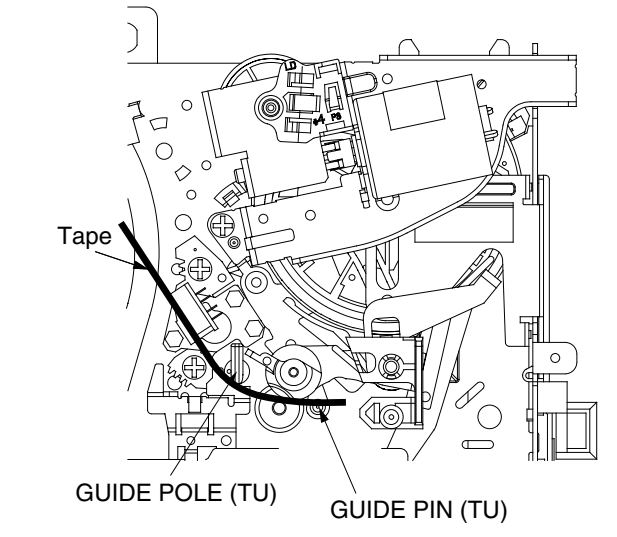


Fig. 3-5

4. Servicing for Tape Jam during the Loading Process

1. Remove the tape if the mechanism part is locked due tangled tape.
2. Rotate the WORM WHEEL of the LOADING MOTOR ASSY shown in the Fig. 4 in the direction of the arrow Ⓐ to eject the cassette tape.

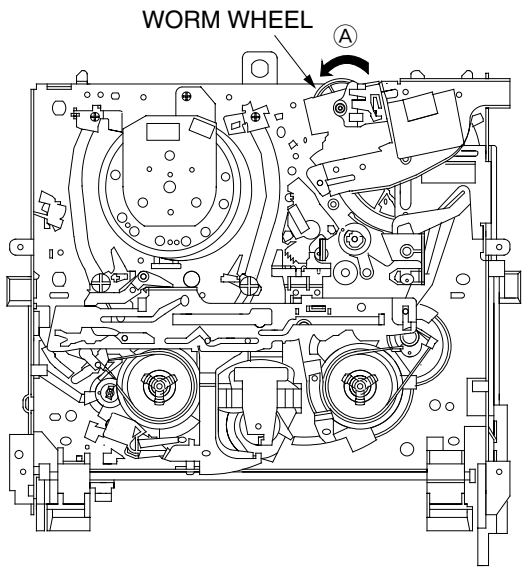


Fig. 4

SERVICE CAN BE EXECUTED WITH THE EE PICTURE DISPLAYED

1. Short-circuit the cathode side of D927 and the GND of the DECK ASSY using the jig shown in Fig. 2.
2. Remove the DECK ASSY.
3. Connect TP5X and TP5Y with a jumper.

Note1: Short-circuit the test points before turning on the power.

Note2: Short-circuit the Shield Plate and the cathode side of D927 using the jig shown in Fig. 2 before attaching the DECK ASSY.

PCB-MAIN (Component side)

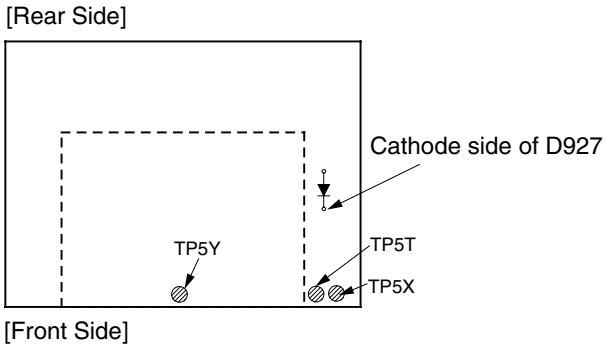


Fig. 1

Jig (Part No. : 859C548O10)

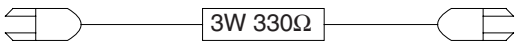


Fig. 2

DECK OPERATION CHECK

Check the DECK position and the operation of the Tape Running System, according to the following procedure.

1. Short-circuit TP5T and TP5Y shown in the Fig. 1.
2. Initialize the E^2PROM.
3. Check the operation of the Tape Running System by pressing the FF button, REW button on the PCB-MAIN.
   FF button : For forward rotation of the CAPSTAN MOTOR
   REW button : For reverse rotation of the CAPSTAN MOTOR
4. Check the DECK position by pressing the CH-UP button, CH-DOWN button on the PCB-MAIN.
   CH-UP button : DECK operation in the Loading direction
   CH-DOWN button : DECK operation in the Unloading direction

HOW TO INITIALIZE THE E²PROM

A replacement E²PROM is not initialized before shipping, so the E²PROM must be initialized when replaced.

Initialize the E²PROM by following the steps below.

1. Press and hold the POWER button on the set for 8 seconds.
2. E²PROM initial setting is completed.

WHEN REPLACING IC5A0

When replacing IC5A0, be sure to press the RESET button after turning on the power.

ELECTRICAL ADJUSTMENTS

Perform only the alignments required. If proper equipment is not available, do not attempt an alignment.

❑ PRE-ADJUSTMENT SETTINGS

- Set the PerfecTape™ to “MANUAL” mode.

❑ TEST EQUIPMENT

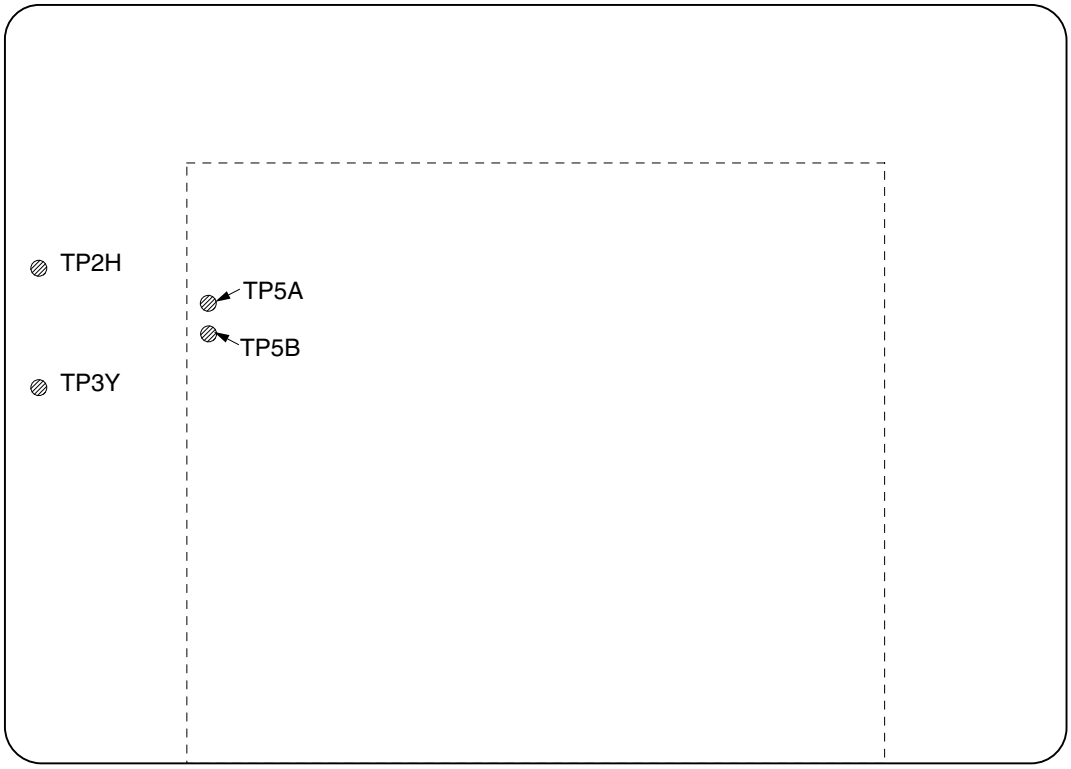
- Miscellaneous electrical tools
- Oscilloscope (10:1 probe unless 1:1 specified.)

❑ ALIGNMENT TAPES

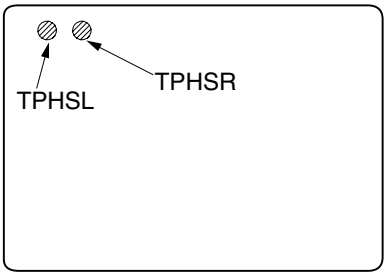
- NS1.....Part No.859C339O00
  Stair step, Color Bars, RF, 1kHz audio (SP)
- NM6KE2.....Part No.859C339O90
  Monoscope, 6kHz audio (SP)
- NC1KS·····Part No.859C339O80
  Color Bars, 1kHz audio (SP)
- NM3KE6.....Part No.859C339O50
  Monoscope, 3kHz audio (EP)
- NMX.....Part No.859C568O60
  Monoscope, 3kHz audio (SP)
- D-VHS (HS/STD)·····Part No.859C340O00

LOCATIONS

PCB-MAIN (Component side) **REAR**



PCB-HEAD AMP (Component side)

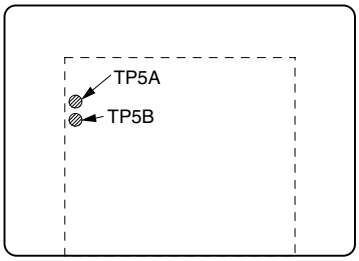


[Servo circuit] 1. Playback Switching Point	**Adjustment purpose**	Video switch over timing during playback.
	Symptom when incorrectly adjusted	Switching noise or jitter in the playback picture.

Measuring instrument and condition		**VCR set up condition**	
– – –		**Input signal**	– – –
Test point	– – –	**Using tape**	Alignment Tape (NS1, stair step)
EXT trigger	– – –	**VCR condition**	Playback
Measurement range	– – –	**Using Jig**	– – –

1. Play back an Alignment Tape. (NS1, stair step)
2. Short-circuit TP5A to TP5B.
3. Push the SP / EP buttons.
   (The adjustment will finish in about six seconds.)
4. The automatic adjustment will finish in about 6 seconds. A value between 55 and 75 will be displayed on the fluorescent display.
5. Open-circuit TP5A to TP5B.

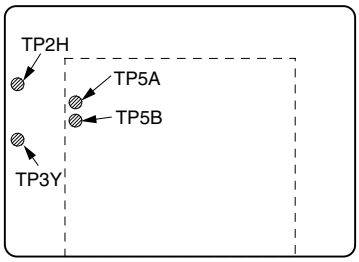
PCB-MAIN (Component side)



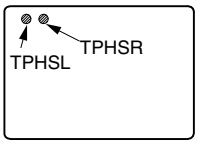
[D-VHS signal circuit] 2. D-VHS switching point	**Adjustment purpose**	To adjust the timing for switching the video head during playback.
	Symptom when incorrectly adjusted	Images may not be displayed or block noise may appear.

Measuring instrument and condition		**VCR set up condition**	
Oscilloscope		**Input signal**	– – –
Test point	TPHSL,TPHSR	**Using tape**	Alignment Tape
EXT trigger	TP2H,TP3Y	**VCR condition**	Playback
Measurement range	DIV 10 mV TIM 50 µs	**Using Jig**	– – –

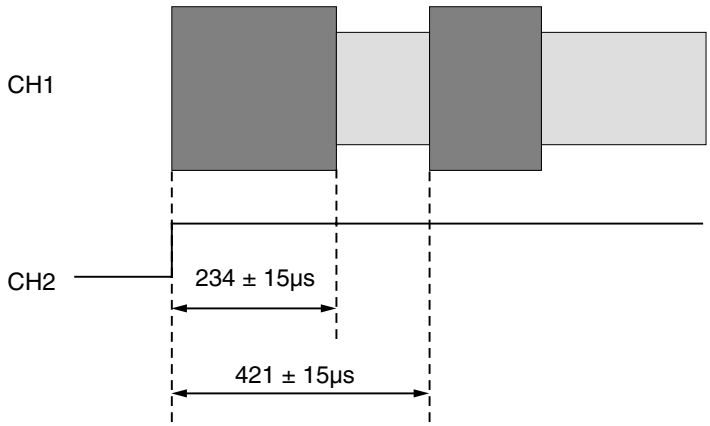
PCB-MAIN (Component side)



PCB-HEAD AMP (Component side)

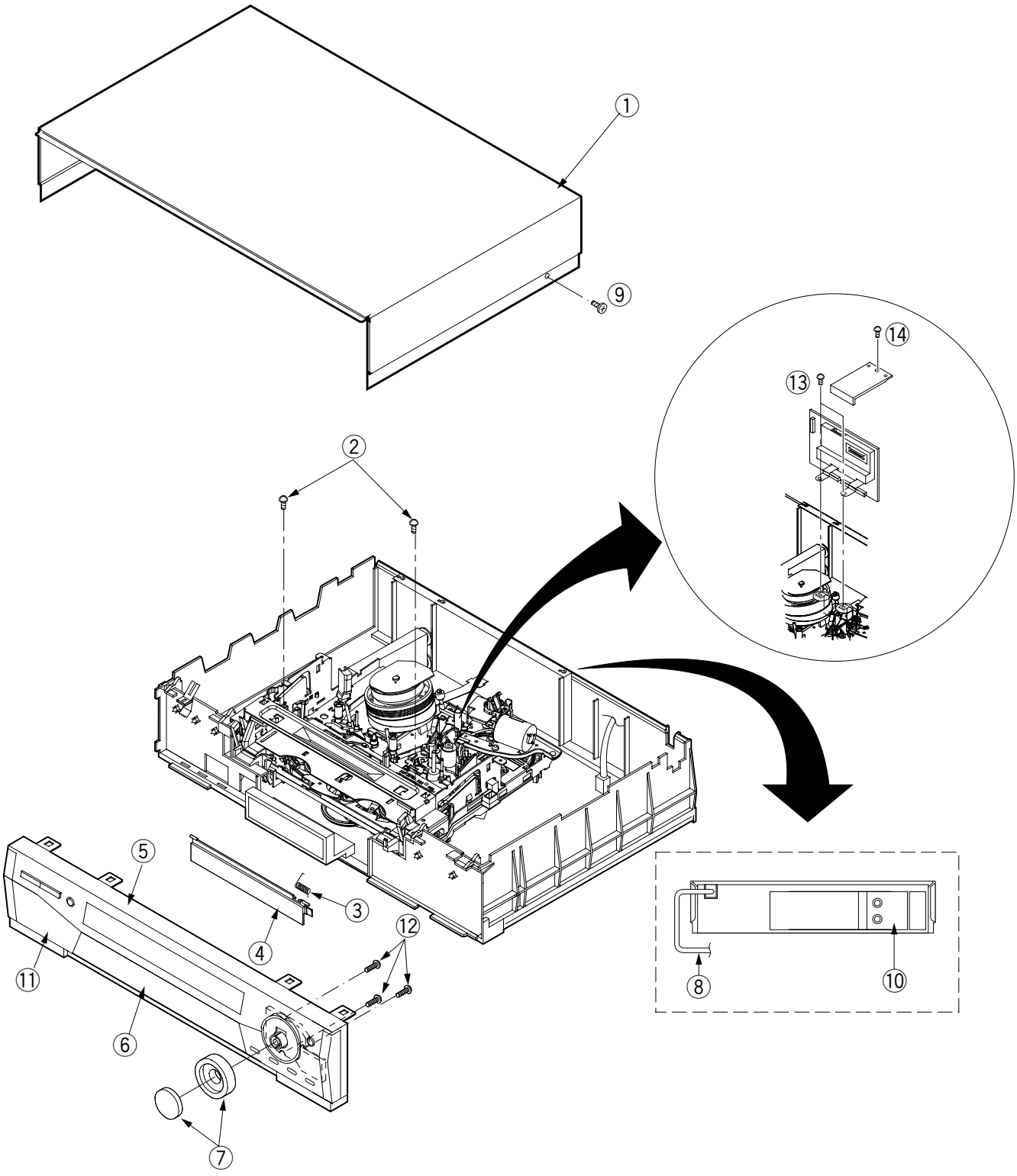


1. Playback an alignment tape (D-VHS [HS/STD] : STD part).
2. Connect TP5A and TP5B for short circuit.
3. Press the SP/EP button.
4. Connect the CH1 of the oscilloscope with TPHSL, and connect the CH2 with TP2H.
5. Trigger at the rising edge of the waveform of TP2H. Set the period from the trigger point of TPHSL to the specified value as shown in the figure below by pressing the JOG +/- button or the CH UP/DOWN button on the remote hand unit.
6. Disconnect TP5A and TP5B.
7. Playback an alignment tape (D-VHS [HS/STD] : HS part).
8. Carry out step 2 and 3.
9. Press the PLAY button to switch to display "AM" on the fluorescent display.
10. Carry out step 4 and 5.
11. Press the PLAY button to switch to display "PM" on the fluorescent display.
12. Connect the CH1 of the oscilloscope with TPHSR, and connect the CH2 with TP3Y.
13. Trigger at the rising edge of the waveform of TP3Y. Set the period from the trigger point of TPHSR to the specified value as shown in the figure below by pressing the JOG +/- button or the CH UP/DOWN button on the remote hand unit.
14. Disconnect TP5A and TP5B.



PARTS LIST

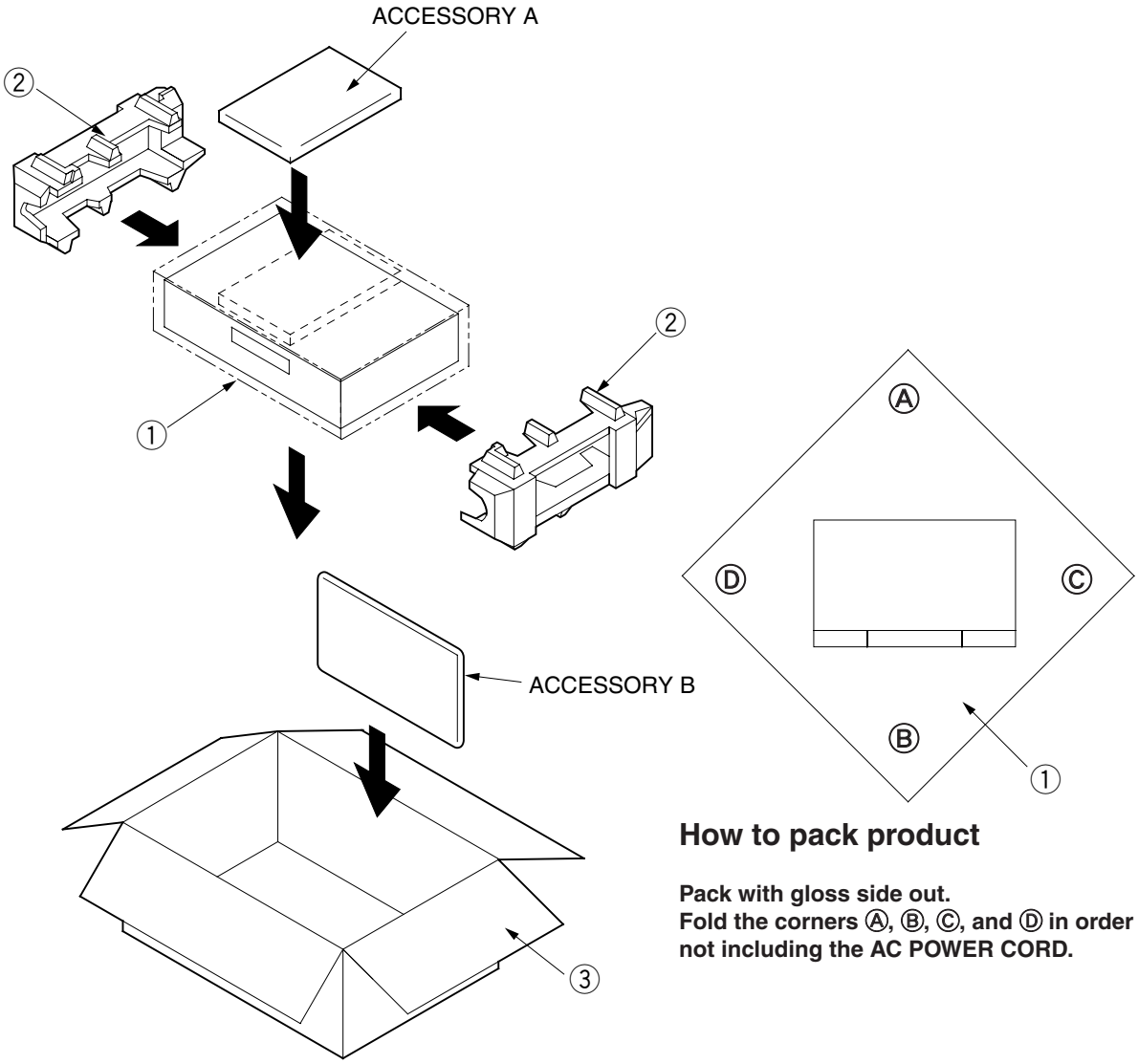
1. CABINET ASSEMBLY



: Critical Component

ITEM NO.	PARTS NO.	PARTS NAME	DESCRIPTION
		CABINET ASSEMBLY	
1	968C050O04	TOP COVER ASSY	
2	669D221O40	SCREW	4 × 12 46LA005
3	572D385O10	F/L SPRING	
4	752C672O60	CASSETTE DOOR ASSY	
5	701B416O40	FRONT UNIT	
6	752C671O40	TIMER PANEL	
7	701C081O40	JOG SHUTTLE ASSY	
8	246C324O10	AC POWER CORD	
9	669D501O10	SCREW	3 × 10
10	761B371O90	ANTENNA COVER	
11	752C677O00	DOOR PANEL ASSY	
12	669D531O10	SCREW	2.6 × 8
13	669D229O90	SCREW	M3.0 × 4 46LA005
14	669D500O30	SCREW	3 × 10

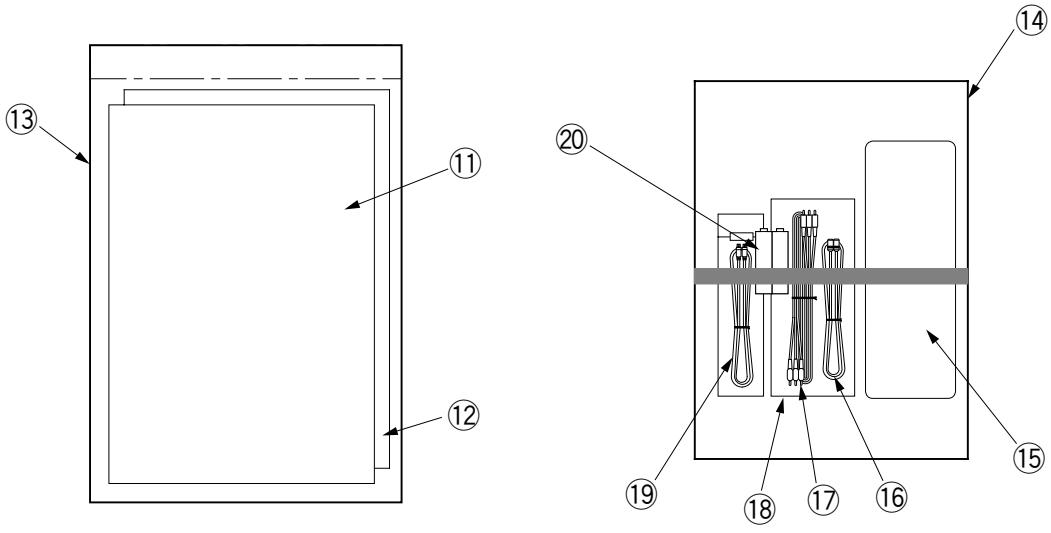
2. PACKING PARTS



How to pack product

Pack with gloss side out.
Fold the corners Ⓐ, Ⓑ, Ⓒ, and Ⓓ in order not including the AC POWER CORD.

A ACCESSORY B

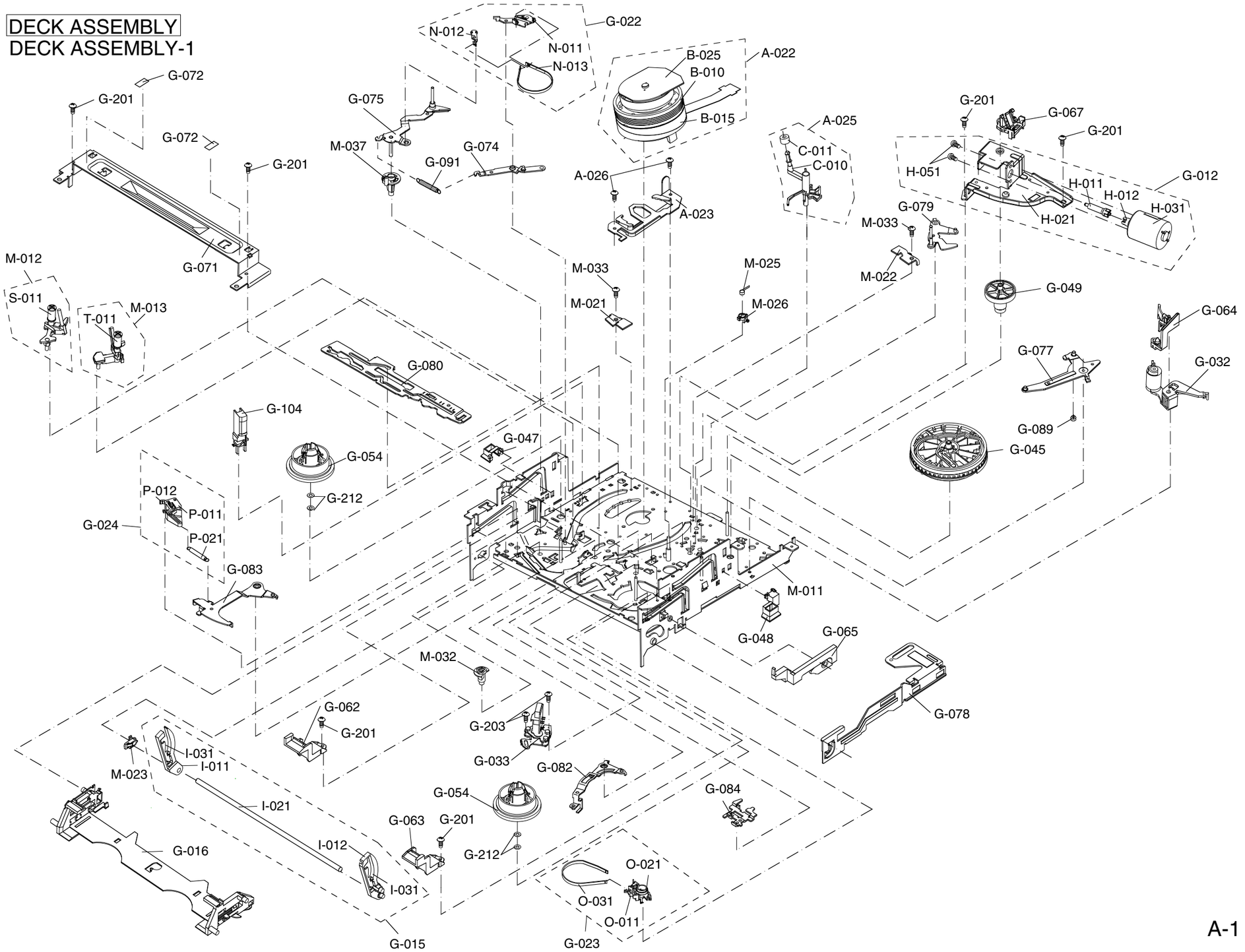


ITEM NO.	PARTS NO.	PARTS NAME	DESCRIPTION
		PACKING PARTS	
1	831D190O30	PACKING SHEET	800X800
2	803A570O10	CUSHION	
3	802B797O20	PACKING CASE	
		ACCESSORY	
11	872C246O50	INSTRUCTION BOOK	
12	–––––––	REGISTRATION CARD	
13	831D337O10	PACKING BAG	(FOR ACCESSORY A)
14	–––––––	ACCESSORY BOARD	
15	939P755O40	REMOTE HAND UNIT	
16	243C273O40	CABLE	
17	242C247O30	CABLE	
18	–––––––	PACKING BAG	(FOR CABLE)
19	242P021O10	CABLE	IEEE1394
20	–––––––	BATTERY	

DECK ASSEMBLY

DECK ASSEMBLY

DECK ASSEMBLY-1



DECK ASSEMBLY-1

＊ Settled Service Parts

ITEM	PARTS NO.	＊	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
A-022	948B419O01		G-1		DRUM ASSY		1
A-023	592B552O10		F-2		DRUM CLAMPER		1
A-025	927D027O01		H-2		CLEANING ASSY		1
A-026	669D556O10	○	F-2		SCREW	2.6 × 4	2
B-010	925B139O21	○	G-1		UPPER DRUM ASSY		1
B-015	925B140O01	○	G-1		LOWER DRUM ASSY		1
B-025	288P158O30	○	G-1		DRUM MOTOR		1
C-010	641B903O10	○	G-2		CLEANING ARM		1
C-011	554D104O20	○	H-2		FELT RING		1
G-012	928D472O11	○	K-2		LOADING MOTOR ASSY		1
G-015	948D088O03		D-8		F/L ARM ASSY		1
G-016	948B406O03	○	B-8		F/L BOTTOM ASSY		1
G-022	948D095O01		F-1		TENSION BELT ASSY		1
G-023	948D096O01		F-8		BRAKE ASSY (TU)		1
G-024	948D097O02	○	A-5		CHARGE ASSY		1
G-032	594C260O40	○	K-4		PINCH UNIT		1
G-033	460C007O10	○	E-7		A/C HEAD UNIT		1
G-045	621C769O20	○	I-4		MAIN CAM		1
G-047	621C783O10	○	E-4		SENSER COVER (SP)	SUPPLY	1
G-048	621C784O10	○	G-6		SENSER COVER (TU)	TAKE UP	1
G-049	621C794O10	○	J-3		WROM WHEEL		1
G-054	640C181O20	○	D-4	D-7	REEL DISK		2
G-062	621C789O10	○	C-6		INSERT GUIDE (SP)	SUPPLY	1
G-063	621C790O10	○	D-7		INSERT GUIDE (TU)	TAKE UP	1
G-064	641B902O10	○	K-3		PINCH ARM CAP		1
G-065	641B908O10	○	H-6		DOOR ARM		1
G-067	621C804O10		J-1		FC HOLDER		1
G-071	592B549O10	○	B-3		STAY PLATE		1
G-072	640D852O20		B-1	B-2	SPACER		2
G-074	594C217O10	○	E-2		TENSION LEVER		1
G-075	594C218O10	○	D-1		TENSION ARM		1
G-077	594C222O10	○	I-3		BRAKE LEVER		1
G-078	594C223O10	○	I-6		F/L PLATE		1
G-079	594C224O20	○	H-2		GUIDE ARM (TU)		1
G-080	594C225O30	○	D-4		BRAKE CAM PLATE		1
G-082	594C229O10	○	E-7		SHIFT LEVER		1
G-083	594C230O10	○	C-5		SWING LEVER		1
G-084	597D866O10	○	G-7		L/D LOCK LEVER		1
G-089	622D829O10		I-4		LB PIN		1
G-091	572D974O10	○	D-2		TENSION SPRING		1
G-104	460D018O10	○	C-4		F/E HEAD		1
G-201	669D224O90	○	A-1	C-2	SCREW	2.6 × 5	6
			D-7	I-1			
			J-2				
G-203	669D476O30	○	E-7		SCREW	2.6 × 6	2
G-212	552C017O30	○	C-5	E-8	THRUST WASHER	2.5 × 6.0 × 0.13	4
H-011	621C758O10	○	J-2		LOADING WORM		1
H-012	622D788O10		J-2		COUPLING WORM		1
H-021	594C216O10		J-2		MOTOR HOLDER		1
H-031	288P090O10		J-2		LOADING MOTOR		1
H-051	669D173O80	○	H-2		SCREW	M3 × 0.5-4	2
I-011	641B913O10	○	B-7		ARM (SP)		1
I-012	641B911O20	○	C-8		ARM (TU)		1
I-021	631D823O10	○	C-7		F/L SHAFT		1

＊ Settled Service Parts

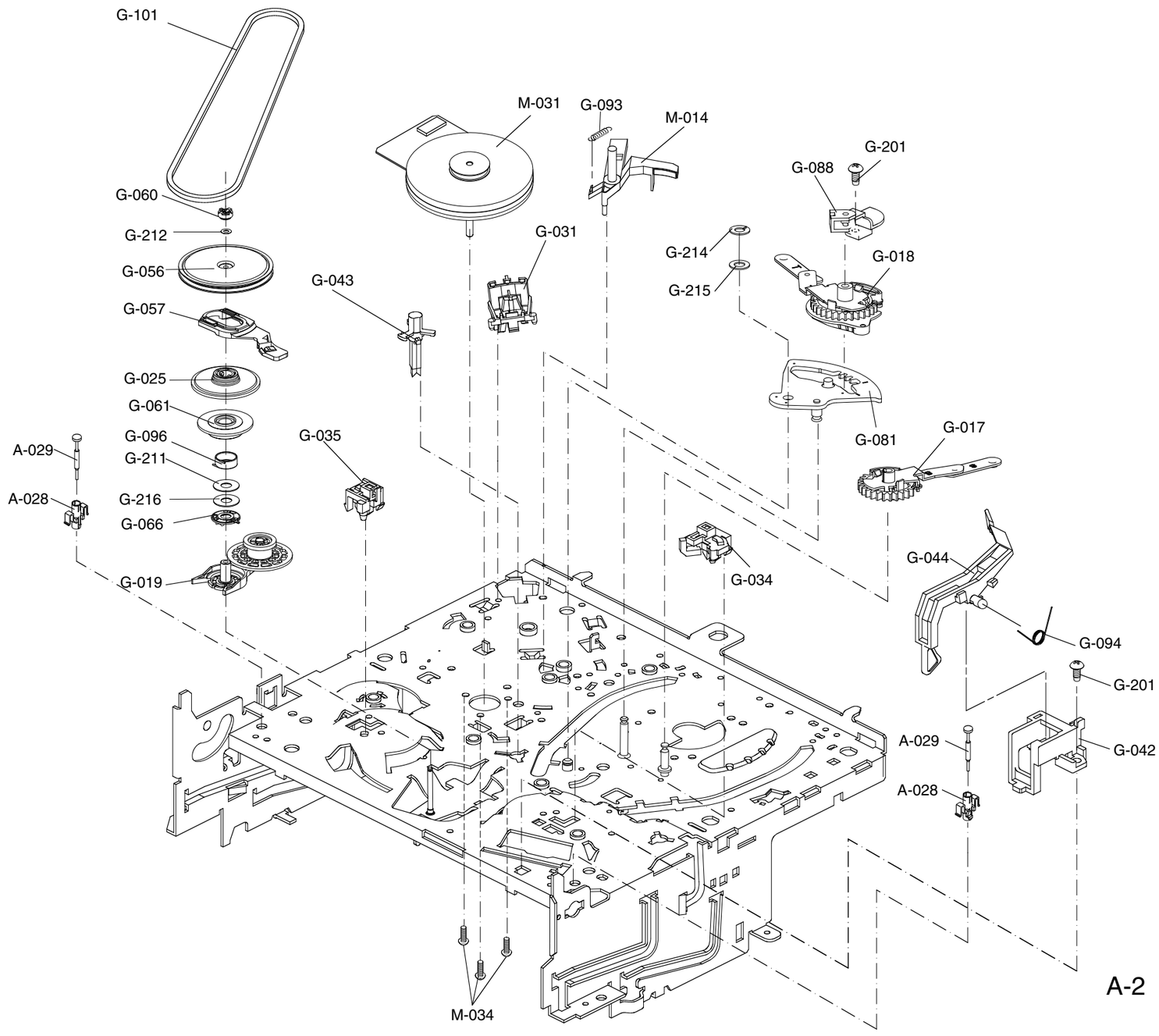
ITEM	PARTS NO.	＊	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
I-031	573D004O10	○	B-7	D-8	ARM SPRING		2
M-011	948B403O01		G-5		MAIN PLATE ASSY		1
M-012	948D084O01	○	A-3		TAPE GUIDE ASSY (SP)	SUPPLY	1
M-013	948D086O01	○	B-3		TAPE GUIDE ASSY (TU)	TAKE UP	1
M-021	594C258O10		F-3		GUIDE CATCHER (SP)	SUPPLY	1
M-022	594C259O10		H-3		GUIDE CATCHER (TU)	TAKE UP	1
M-023	622D799O10	○	B-7		F/L BEARING		1
M-025	622D820O10	○	G-3		GUIDE PIN COVER		1
M-026	621C944O10	○	G-3		GUIDE PIN COVER 2		1
M-032	622D791O10	○	D-6		BELT ADJUSTER		1
M-033	669D224O90	○	F-3	H-2	SCREW	M2.6 × 5	2
M-037	622D792O10	○	C-2		TENS AXIS HOLDER		1
S-011	522B061O10	○	A-3		GUIDE ROLLER (SP)	SUPPLY	1
T-011	522B061O10	○	B-3		GUIDE ROLLER (TU)	TAKE UP	1
N-011	621C759O10	○	E-1		BELT LEVER		1
N-012	622D790O10	○	D-1		BELT HOLDER		1
N-013	554D103O10	○	E-1		BRAKE BELT (SP)		1
O-011	621C760O10	○	F-8		BRAKE (TU)		1
O-021	572D975O10	○	F-8		BRAKE SPRING		1
O-031	554D103O10	○	F-8		BRAKE BELT (TU)		1
P-011	640C187O10		B-5		CHARGE BASE		1
P-012	640C188O20		B-5		CHARGE TIP		1
P-021	572D983O20		B-5		CHARGE SPRING		1

A	B	C	D	E	F	G	H	I

1
2
3
4
5
6
7
8

DECK ASSEMBLY

DECK ASSEMBLY-2



A-2

DECK ASSEMBLY-2

* Settled Service Parts

ITEM	PARTS NO.	*	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
A-028	621C810O10		A-5	H-7	SSW HOLDER		2
A-029	622D837O10		A-4	H-6	SSW SLIDER		2
G-017	948D089O01	◯	H-4		LOADING ARM ASSY (SP)	SUPPLY	1
G-018	948D090O01	◯	G-3		LOADING ARM ASSY (TU)	TAKE UP	1
G-019	622D916O10	◯	B-5		IDLER 2 UNIT		1
G-025	948D098O03	◯	B-4		PULLEY GEAR ASSY		1
G-031	622D800O10	◯	E-3		MODE POSITION UNIT		1
G-034	622D801O10	◯	F-5		REV UNIT (SP)	SUPPLY	1
G-035	622D802O10	◯	C-4		REV UNIT (TU)	TAKE UP	1
G-042	621C807O10		I-6		REC HOLDER		1
G-043	621C765O10	◯	C-3		LAMP GUIDE		1
G-044	621C766O20	◯	H-5		REC LEVER		1
G-056	640C185O30	◯	B-3		BELT PULLEY		1
G-057	640C186O10	◯	B-3		SHIFT SLIDER		1
G-060	640D948O10	◯	B-2		PULLEY BUSH		1
G-061	640D949O10	◯	B-4		SLIP GEAR		1
G-066	640C189O20	◯	B-5		SLIP ADJUSTER		1
G-081	594C228O10	◯	G-4		A/L LEVER		1
G-088	594C304O10	◯	G-2		SPACER PLATE		1
G-093	572D976O10	◯	E-2		CAPSTAN BRAKE SPRING		1
G-094	572D977O10	◯	I-6		REC SPRING		1
G-096	573D073O10	◯	B-4		SLIP SPRING		1
G-101	521D102O10	◯	B-1		REEL BELT		1
G-201	669D224O90	◯	G-2	I-6	SCREW	2.6 × 5	2
G-211	597D997O10	◯	B-4		SLIP WASHER 2		1
G-212	552C017O30	◯	B-3		THRUST WASHER	2.5 × 6.0 × 0.13	1
G-214	552C022O10		F-3		CUT WASHER	4.0 × 8.0 × 0.5	1
G-215	680P140O10		F-3		WASHER		1
G-216	552C012O50		B-5		THRUST WASHER	5.6 × 9.5 × 0.2	1
M-014	948D094O01	◯	F-2		CAPSTAN BRAKE ASSY		1
M-031	288P213O20	◯	E-2		CAPSTAN MOTOR	F2QSB54	1
M-034	669D285O10		D-8		SCREW	M2.6 × 6	3

3. ELECTRICAL PARTS

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
	INTEGRATED CIRCUITS		
IC2A0	270P785O10	IC	HA118217NF
IC2001	270P671O10	IC	AN3360SB
IC2002	270P671O10	IC	AN3360SB
IC3A0	275P410O10	IC	AN3662FBP
IC5A0	275P824O10	MOS IC	M37760MFH7B9GP
IC5A1	274P670O60	IC	CAT24WC16J-TE13
IC5A4	272P235O10	IC	TA7291S
IC5A5	263P653O10	MOS IC	TC4053BF
IC5D01	275P825O10	MOS IC	M37777MFH101GP
IC5D02	275P700O20	MOS IC	SN74ACT244NSR
IC5D03	275P649O20	MOS IC	SN74LVTH541NSR
IC8A0	275P345O20	IC	PT6312LQ/µPD16312GB
IC901	272P500O20	IC	HA17431PA
	TRANSISTORS		
Q2A0	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2A2	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2A7	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q2C0	260P560O40	TRANSISTOR	2SA933S-S
Q2C2	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q2V1	261P066O10	CHIP TRANSISTOR	2SA1037AK
Q2009	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2011	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2012	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2013	261P066O10	CHIP TRANSISTOR	2SA1037AK
Q2014	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2015	261P819O10	CHIP TRANSISTOR	2SA1532-C
Q2016	261P819O10	CHIP TRANSISTOR	2SA1532-C
Q2017	260P844O10	CHIP TRANSISTOR	FMW1
Q2018	261P819O10	CHIP TRANSISTOR	2SA1532-C
Q2019	261P819O10	CHIP TRANSISTOR	2SA1532-C
Q2020	260P844O10	CHIP TRANSISTOR	FMW1
Q2023	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q2031	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2032	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q2034	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2035	261P066O10	CHIP TRANSISTOR	2SA1037AK
Q2036	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2038	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q2039	261P819O10	CHIP TRANSISTOR	2SA1532-C
Q2040	261P819O10	CHIP TRANSISTOR	2SA1532-C
Q2042	260P844O10	CHIP TRANSISTOR	FMW1
Q2043	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q2044	260P844O10	CHIP TRANSISTOR	FMW1
Q2045	260P844O10	CHIP TRANSISTOR	FMW1
Q2046	260P844O10	CHIP TRANSISTOR	FMW1
Q2047	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q2048	260P562O40	TRANSISTOR	2SA952-K
Q2049	260P562O40	TRANSISTOR	2SA952-K
Q2050	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q2051	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q2053	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2054	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2055	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2056	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2057	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q2060	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q2061	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q2062	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q351	261P056O10	TRANSISTOR	2SD734F
Q352	260P629O60	TRANSISTOR	2SC3331-T
Q353	260P629O60	TRANSISTOR	2SC3331-T
Q354	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q355	260P562O40	TRANSISTOR	2SA952-K
Q356	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q3A0	261P065O30	CHIP TRANSISTOR	DTA124EKA
Q3A1	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q3A2	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q3A4	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q5A3	260P802O20	CHIP TRANSISTOR	2SA1235-F
Q5A5	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q5B1	261P066O60	CHIP TRANSISTOR	2SA1037AK-S
Q5L0	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q5M0	260P804O30	CHIP TRANSISTOR	2SC3052-G
Q5P0	260P818O30	CHIP TRANSISTOR	2SC2412K-S
Q5P1	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q5D01	261P067O30	CHIP TRANSISTOR	DTC124EKA
Q901	261P116O10	TRANSISTOR	2SK3199
Q903	260P629O60	TRANSISTOR	2SC3331-T
Q904	261P036O10	TRANSISTOR	2SB1548
Q905	260P559O50	TRANSISTOR	2SC1740S-E
Q906	260P630O10	TRANSISTOR	2SD2012
Q907	260P559O50	TRANSISTOR	2SC1740S-E
Q908	260C628O10	TRANSISTOR	2SA1619A-Q
Q909	260P559O50	TRANSISTOR	2SC1740S-E
Q910	260C560O10	TRANSISTOR	2SA933S-R,S
Q925	260C560O10	TRANSISTOR	2SA933S-R,S
Q985	260P585O30	TRANSISTOR	2SD1682-T,U
Q990	260P559O50	TRANSISTOR	2SC1740S-E
Q991	261P036O10	TRANSISTOR	2SB1548
Q9P3	260P559O30	TRANSISTOR	2SC1740S-S
Q9P4	260P559O30	TRANSISTOR	2SC1740S-S
	DIODES		
D2001	264P807O10	CHIP DIODE	DAP202K
D2002	264P807O10	CHIP DIODE	DAP202K
D3A2	264P568O30	DIODE	1SS254
D5A2	264P568O30	DIODE	1SS254
D5A9	264P795O20	LIGHT EMITTING DIODE	SID1050CMMTP5
D5B4	264P795O20	LIGHT EMITTING DIODE	SID1050CMMTP5
D5B5	264P795O20	LIGHT EMITTING DIODE	SID1050CMMTP5
D5C0	264P795O20	LIGHT EMITTING DIODE	SID1050CMMTP5
D5D0	264P342O70	DIODE	HZ4C2
D5R0	264P568O30	DIODE	1SS254
D5R2	264P568O30	DIODE	1SS254
D5R3	264P568O30	DIODE	1SS254
D801	264P568O30	DIODE	1SS254
D802	264P568O30	DIODE	1SS254
D803	264P568O30	DIODE	1SS254
D804	264P568O30	DIODE	1SS254
D805	264P568O30	DIODE	1SS254

: Critical Components

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
D809	264P621O20	LIGHT EMITTING DIODE	SEL2410E TP2
D810	264P621O20	LIGHT EMITTING DIODE	SEL2410E TP2
D811	264P568O30	DIODE	1SS254
D812	264P568O30	DIODE	1SS254
D813	264P568O30	DIODE	1SS254
D814	264P568O30	DIODE	1SS254
D821	264P568O30	DIODE	1SS254
D822	264P568O30	DIODE	1SS254
D823	264P568O30	DIODE	1SS254
D824	264P568O30	DIODE	1SS254
D8G5	264P568O30	DIODE	1SS254
D8G6	264P568O30	DIODE	1SS254
D8G7	264P568O30	DIODE	1SS254
D901	264P508O70	DIODE	S1WB(A)60F4072
D902	264P687O20	DIODE	AG01
D905	264P774O70	DIODE	MTZJ5.1A
D907	264P670O10	DIODE	D5S4M
D908	264P695O70	DIODE	RK39
D909	264P687O20	DIODE	AG01
D910	264P687O20	DIODE	AG01
D911	264P527O30	DIODE	D1NS4/AK04
D912	264P456O80	DIODE	RD2.4EB1
D913	264P783O60	DIODE	MTZJ30D
D914	264P783O10	DIODE	MTZJ27D
D917	264P452O30	DIODE	HZ5C3
D918	264P568O30	DIODE	1SS254
D919	264P568O30	DIODE	1SS254
D920	264P500O20	DIODE	EM01Z
D921	264P568O30	DIODE	1SS254
D926	264P488O90	DIODE	RD16FB
D927	264P695O70	DIODE	RK39
D931	264P568O30	DIODE	1SS254
D940	264P568O30	DIODE	1SS254
D941	264P568O30	DIODE	1SS254
D942	264P483O30	DIODE	RD4.7FB1
D943	264P774O70	DIODE	MTZJ5.1A
D950	264P773O60	DIODE	MTZJ3.9B
D951	264P500O20	DIODE	EM01Z
D985	264P783O60	DIODE	MTZJ30D
D990	264P695O80	DIODE	RK36
D991	264P568O30	DIODE	1SS254
	FILTERS		
L901	351P172O10	LINE FILTER	SS11V-10062
	COILS		
L01	325C472O50	PEAKING COIL	100µH-J
L03	325C471O70	PEAKING COIL	22µH-J
L04	325C472O50	PEAKING COIL	100µH-J
L2A0	325C167O30	PEAKING COIL	68µH-J
L2A1	325C166O40	PEAKING COIL	12µH-J
L2A3	325C472O50	PEAKING COIL	100µH-J
L2A5	325C472O50	PEAKING COIL	100µH-J
L2A8	325C472O70	PEAKING COIL	150µH-J
L2V6	325C472O50	PEAKING COIL	100µH-J
L2001	325C472O50	PEAKING COIL	100µH-J
L2002	325C472O50	PEAKING COIL	100µH-J
L2003	325C472O50	PEAKING COIL	100µH-J
L2004	325C472O50	PEAKING COIL	100µH-J
L301	321C114O80	RF COIL	8200µH-J
L350	325C472O50	PEAKING COIL	100µH-J
L3A0	325C472O50	PEAKING COIL	100µH-J
L3A1	325C472O50	PEAKING COIL	100µH-J
L3A2	325C122O50	PEAKING COIL	100µH-K
L5A0	325C472O50	PEAKING COIL	100µH-J
L5D01	325C471O90	PEAKING COIL	33µH-J
L8A0	325C122O50	PEAKING COIL	100µH-K
L902	321C141O90	RF COIL	33µH-K
L903	321C141O30	RF COIL	10µH-K
L904	321C141O90	RF COIL	33µH-K
L990	321C141O90	RF COIL	33µH-K
T350	409P880O30	BIAS OSCILLATOR COIL	960720174/B-161-001
	TRANSFORMERS		
T901	350P717O90	POWER TRANSFORMER	SRW2929ED-686V0110
	VARIABLE RESISTORS		
R901	109C010O50	SOLID RESISTOR	1/2W 2.2MΩ-K(UL)
R930	109C010O10	SOLID RESISTOR	1/2W 1MΩ-K
	RESISTORS		
JP2B5	103P509O50	CHIP RESISTOR	0Ω(RM1608)
R2A0	103P503O50	CHIP RESISTOR	1/16W 6.8kΩ-J
R2A1	103P502O60	CHIP RESISTOR	1/16W 1.2kΩ-J
R2A2	103P503O00	CHIP RESISTOR	1/16W 2.7kΩ-J
R2A4	103P503O10	CHIP RESISTOR	1/16W 3.3kΩ-J
R2A7	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2A8	103P504O20	CHIP RESISTOR	1/16W 27kΩ-J
R2A9	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2B1	103P501O80	CHIP RESISTOR	1/16W 270Ω-J
R2B7	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2B9	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2C4	103P509O50	CHIP RESISTOR	0Ω(RM1608)
R2C5	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2C6	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2D1	103P504O00	CHIP RESISTOR	1/16W 18kΩ-J
R2D3	103P503O60	CHIP RESISTOR	1/16W 8.2kΩ-J
R2E1	103P501O70	CHIP RESISTOR	1/16W 220Ω-J
R2F4	103P509O90	CHIP RESISTOR	1/16W 75Ω-J
R2V6	103P501O70	CHIP RESISTOR	1/16W 220Ω-J
R2V7	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2014	103P502O70	CHIP RESISTOR	1/16W 1.5kΩ-J
R2016	103P491O10	CHIP METAL RESISTOR	1/16W 270Ω-F
R2017	103P502O70	CHIP RESISTOR	1/16W 1.5kΩ-J
R2020	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2021	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2022	103P509O90	CHIP RESISTOR	1/16W 75Ω-J
R2023	103P509O90	CHIP RESISTOR	1/16W 75Ω-J
R2024	103P501O50	CHIP RESISTOR	1/16W 150Ω-J
R2025	103P501O30	CHIP RESISTOR	1/16W 100Ω-J
R2026	103P500O30	CHIP METAL RESISTOR	1/16W 15Ω-J
R2027	103P501O60	CHIP RESISTOR	1/16W 180Ω-J

: Critical Components

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R2028	103P502O20	CHIP RESISTOR	1/16W 560Ω-J
R2029	103P501O50	CHIP RESISTOR	1/16W 150Ω-J
R2030	103P501O30	CHIP RESISTOR	1/16W 100Ω-J
R2031	103P502O70	CHIP RESISTOR	1/16W 1.5kΩ-J
R2032	103P504O20	CHIP RESISTOR	1/16W 27kΩ-J
R2033	103P504O50	CHIP RESISTOR	1/16W 47kΩ-J
R2034	103P504O20	CHIP RESISTOR	1/16W 27kΩ-J
R2035	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2036	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2037	103P501O80	CHIP RESISTOR	1/16W 270Ω-J
R2038	103P502O80	CHIP RESISTOR	1/16W 1.8kΩ-J
R2039	103P502O80	CHIP RESISTOR	1/16W 1.8kΩ-J
R2040	103P501O80	CHIP RESISTOR	1/16W 270Ω-J
R2041	103P501O80	CHIP RESISTOR	1/16W 270Ω-J
R2042	103P502O80	CHIP RESISTOR	1/16W 1.8kΩ-J
R2043	103P502O80	CHIP RESISTOR	1/16W 1.8kΩ-J
R2044	103P501O80	CHIP RESISTOR	1/16W 270Ω-J
R2045	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2046	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2047	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2048	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2049	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2050	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2051	103P509O50	CHIP RESISTOR	0Ω(RM1608)
R2052	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2053	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2054	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2055	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2056	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2057	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2058	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R2072	103P491O10	CHIP METAL RESISTOR	1/16W 270Ω-F
R2075	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2077	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R2078	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R2079	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R2080	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R2081	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2082	103P501O80	CHIP RESISTOR	1/16W 270Ω-J
R2083	103P502O80	CHIP RESISTOR	1/16W 1.8kΩ-J
R2084	103P502O80	CHIP RESISTOR	1/16W 1.8kΩ-J
R2085	103P501O80	CHIP RESISTOR	1/16W 270Ω-J
R2086	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2087	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2088	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2089	103P500O10	CHIP RESISTOR	1/16W 10Ω-J
R2090	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2091	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2092	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R2093	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R2094	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R2095	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2096	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2097	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2098	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2099	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R2100	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R2101	103P509O50	CHIP RESISTOR	0Ω(RM1608)
R2102	103P501O50	CHIP RESISTOR	1/16W 150Ω-J
R2103	103P500O30	CHIP METAL RESISTOR	1/16W 15Ω-J
R2104	103P501O60	CHIP RESISTOR	1/16W 180Ω-J
R2105	103P501O50	CHIP RESISTOR	1/16W 150Ω-J
R2106	103P501O30	CHIP RESISTOR	1/16W 100Ω-J
R2107	103P502O70	CHIP RESISTOR	1/16W 1.5kΩ-J
R2108	103P502O20	CHIP RESISTOR	1/16W 560Ω-J
R2111	103P509O50	CHIP RESISTOR	0Ω(RM1608)
R2113	103P501O30	CHIP RESISTOR	1/16W 100Ω-J
R2114	103P504O50	CHIP RESISTOR	1/16W 47kΩ-J
R2115	103P504O20	CHIP RESISTOR	1/16W 27kΩ-J
R2116	103P501O30	CHIP RESISTOR	1/16W 100Ω-J
R2117	103P501O30	CHIP RESISTOR	1/16W 100Ω-J
R2134	103P491O10	CHIP METAL RESISTOR	1/16W 270Ω-F
R2135	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R2136	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2137	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2138	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R2139	103P504O20	CHIP RESISTOR	1/16W 27kΩ-J
R2140	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R2141	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R2144	103P492O30	CHIP METAL RESISTOR	1/16W 820Ω-F
R2145	103P491O10	CHIP METAL RESISTOR	1/16W 270Ω-F
R2146	103P492O30	CHIP METAL RESISTOR	1/16W 820Ω-F
R2147	103P490O80	CHIP METAL RESISTOR	1/16W 200Ω-F
R2150	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2151	103P502O10	CHIP RESISTOR	1/16W 470Ω-J
R2152	103P492O10	CHIP METAL RESISTOR	1/16W 680Ω-F
R301	103P505O50	CHIP RESISTOR	1/16W 330kΩ-J
R302	103P503O80	CHIP RESISTOR	1/16W 12kΩ-J
R303	103P490O80	CHIP METAL RESISTOR	1/16W 200Ω-F
R304	103P504O10	CHIP RESISTOR	1/16W 22kΩ-J
R351	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R352	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R357	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R358	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R365	103P500O90	CHIP RESISTOR	1/20W 47Ω-J
R366	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R367	103P508O40	CHIP RESISTOR	1/16W 2.2Ω-K
R368	103P503O20	CHIP RESISTOR	1/16W 3.9kΩ-J
R3A1	103P503O50	CHIP RESISTOR	1/16W 6.8kΩ-J
R3A3	103P503O50	CHIP RESISTOR	1/16W 6.8kΩ-J
R3A4	103P504O50	CHIP RESISTOR	1/16W 47kΩ-J
R3A5	103P503O50	CHIP RESISTOR	1/16W 6.8kΩ-J
R3A7	103P503O50	CHIP RESISTOR	1/16W 6.8kΩ-J
R3B2	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R3B3	103P503O10	CHIP RESISTOR	1/16W 3.3kΩ-J
R3B4	103P503O10	CHIP RESISTOR	1/16W 3.3kΩ-J
R3B6	103P502O30	CHIP RESISTOR	1/16W 680Ω-J
R3B8	103P502O30	CHIP RESISTOR	1/16W 680Ω-J
R3B9	103P503O50	CHIP RESISTOR	1/16W 6.8kΩ-J
R3C0	103P503O80	CHIP RESISTOR	1/16W 12kΩ-J
R3C1	103P504O50	CHIP RESISTOR	1/16W 47kΩ-J
R3C2	103P502O30	CHIP RESISTOR	1/16W 680Ω-J
R3C4	103P503O10	CHIP RESISTOR	1/16W 3.3kΩ-J
R3C5	103P509O50	CHIP RESISTOR	0Ω(RM1608)

: Critical Components

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R3C9	103P493O50	CHIP METAL RESISTOR	1/16W 2.7kΩ-F
R3G1	103P505O60	CHIP RESISTOR	1/16W 390kΩ-J
R5A1	103P504O00	CHIP RESISTOR	1/16W 18kΩ-J
R5A3	103P504O00	CHIP RESISTOR	1/16W 18kΩ-J
R5A6	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R5A8	103P501O70	CHIP RESISTOR	1/16W 220Ω-J
R5A9	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5B0	103P502O80	CHIP RESISTOR	1/16W 1.8kΩ-J
R5B2	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R5B3	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R5B5	103P505O30	CHIP RESISTOR	1/16W 220kΩ-J
R5B6	103P505O30	CHIP RESISTOR	1/16W 220kΩ-J
R5B8	103P505O00	CHIP RESISTOR	1/16W 120kΩ-J
R5B9	103P505O00	CHIP RESISTOR	1/16W 120kΩ-J
R5C0	103P505O00	CHIP RESISTOR	1/16W 120kΩ-J
R5C6	103P501O70	CHIP RESISTOR	1/16W 220Ω-J
R5C7	103P504O50	CHIP RESISTOR	1/16W 47kΩ-J
R5D4	103P499O40	CHIP METAL RESISTOR	1/16W 750kΩ-F
R5D5	103P506O70	CHIP RESISTOR	1/16W 3.3MΩ-K
R5D6	103P506O10	CHIP RESISTOR	1/16W 1MΩ-J
R5D7	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R5E5	103P502O40	CHIP RESISTOR	1/16W 820Ω-J
R5E7	103P509O50	CHIP RESISTOR	0Ω(RM1608)
R5F7	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R5F8	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R5G5	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5G6	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5G7	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5G8	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5K0	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5K1	103P504O90	CHIP RESISTOR	1/16W 100kΩ-J
R5K2	103P504O90	CHIP RESISTOR	1/16W 100kΩ-J
R5K3	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5K7	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R5K8	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R5L0	103P505O30	CHIP RESISTOR	1/16W 220kΩ-J
R5L2	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R5M0	103P504O10	CHIP RESISTOR	1/16W 22kΩ-J
R5M2	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R5M3	103P503O20	CHIP RESISTOR	1/16W 3.9kΩ-J
R5M4	103P503O40	CHIP RESISTOR	1/16W 5.6kΩ-J
R5M5	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5P0	103P502O70	CHIP RESISTOR	1/16W 1.5kΩ-J
R5P1	103P502O30	CHIP RESISTOR	1/16W 680Ω-J
R5P2	103P506O10	CHIP RESISTOR	1/16W 1MΩ-J
R5P3	103P501O70	CHIP RESISTOR	1/16W 220Ω-J
R5P6	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5P8	103P502O50	CHIP RESISTOR	1/16W 1kΩ-J
R5R2	103P502O60	CHIP RESISTOR	1/16W 1.2kΩ-J
R5R3	103P503O90	CHIP RESISTOR	1/16W 15kΩ-J
R5R5	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R5R7	103P503O30	CHIP RESISTOR	1/16W 4.7kΩ-J
R5S0	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R5S3	103P503O90	CHIP RESISTOR	1/16W 15kΩ-J
R5S4	103P504O40	CHIP RESISTOR	1/16W 39kΩ-J
R5S8	103P493O70	CHIP METAL RESISTOR	1/16W 3.3kΩ-F

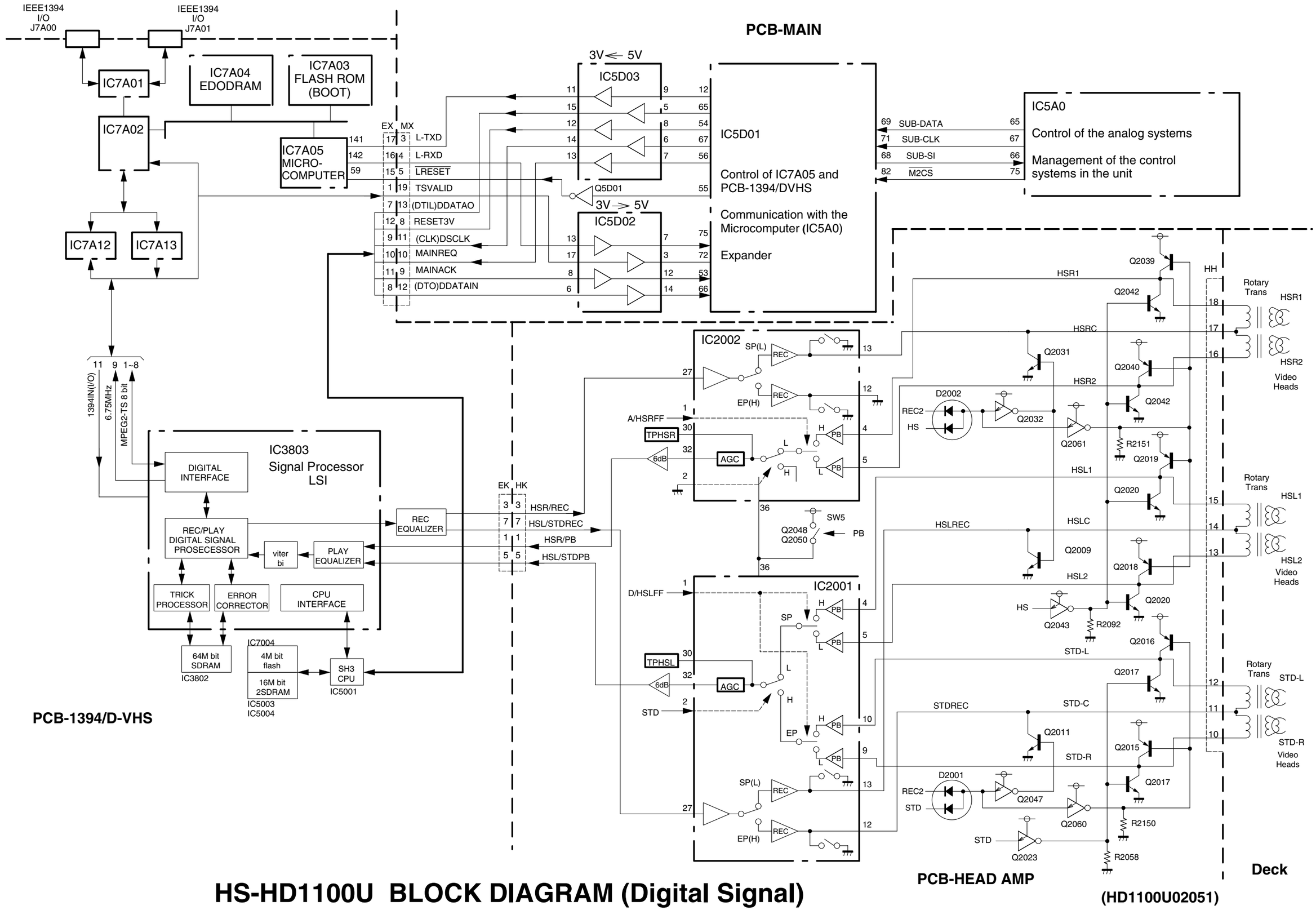
SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R5T5	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R5T6	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R5Y0	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R5D07	103P506O10	CHIP RESISTOR	1/16W 1MΩ-J
R5D08	103P502O40	CHIP RESISTOR	1/16W 820Ω-J
R5D10	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R5D22	103P503O10	CHIP RESISTOR	1/16W 3.3kΩ-J
R5D23	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R5D24	103P504O90	CHIP RESISTOR	1/16W 100kΩ-J
R5D25	103P504O90	CHIP RESISTOR	1/16W 100kΩ-J
R5D86	103P504O90	CHIP RESISTOR	1/16W 100kΩ-J
R8A0	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R8A1	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R8A2	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R8A3	103P504O30	CHIP RESISTOR	1/16W 33kΩ-J
R8A4	103P503O10	CHIP RESISTOR	1/16W 3.3kΩ-J
R8A5	103P504O50	CHIP RESISTOR	1/16W 47kΩ-J
R8A6	103P401O70	CHIP RESISTOR	1/10W 220Ω-J
R8A7	103P401O70	CHIP RESISTOR	1/10W 220Ω-J
R910	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R911	103P492O90	CHIP RESISTOR	1/16W 1.5kΩ-F
R920	103P503O20	CHIP RESISTOR	1/16W 3.9kΩ-J
R921	103P751O30	FUSE RESISTOR	1/4W 100Ω-J
R925	103P502O90	CHIP RESISTOR	1/16W 2.2kΩ-J
R952	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R974	103P504O50	CHIP RESISTOR	1/16W 47kΩ-J
R990	103P503O70	CHIP RESISTOR	1/16W 10kΩ-J
R9D1	103P758O00	FUSE RESISTOR	1/4W 1Ω-J
R9L1	103P505O50	CHIP RESISTOR	1/16W 330kΩ-J
RJ2	103P509O50	CHIP RESISTOR	0Ω(RM1608)
RJ3	103P509O50	CHIP RESISTOR	0Ω(RM1608)
RJ4	103P509O50	CHIP RESISTOR	0Ω(RM1608)
RJ5	103P509O50	CHIP RESISTOR	0Ω(RM1608)
		CAPACITORS AND TRIMMERS	
C10	141P141O20	CHIP CAPACITOR	B50V 1800pF-K
C2A0	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2A2	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2A3	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2A4	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2A6	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2A7	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2A8	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2B9	154P343O90	CHIP CAPACITOR	CH50V 150pF-J
C2C0	154P343O90	CHIP CAPACITOR	CH50V 150pF-J
C2C1	141P144O20	CHIP CAPACITOR	F16V 0.1μF-Z
C2C2	154P343O10	CHIP CAPACITOR	CH50V 68pF-J
C2C3	141P143O80	CHIP CAPACITOR	F50V 0.01μF-Z
C2C4	141P144O20	CHIP CAPACITOR	F16V 0.1μF-Z
C2C5	141P144O20	CHIP CAPACITOR	F16V 0.1μF-Z
C2C6	141P144O20	CHIP CAPACITOR	F16V 0.1μF-Z
C2C7	141P144O20	CHIP CAPACITOR	F16V 0.1μF-Z
C2C8	141P140O30	CHIP CAPACITOR	B50V 330pF-K
C2C9	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2D0	141P144O20	CHIP CAPACITOR	F16V 0.1μF-Z
C2D1	141P142O10	CHIP CAPACITOR	B25V 0.01μF-K
C2D2	141P144O20	CHIP CAPACITOR	F16V 0.1μF-Z

: Critical Components

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
C2D3	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C2D4	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C2D6	154P340O50	CHIP CAPACITOR	CH50V 4pF-C
C2D7	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2D8	141P142O50	CHIP CAPACITOR	B25V/16V 0.022µF-K
C2D9	141P141O80	CHIP CAPACITOR	B50V 5600pF-K
C2E0	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C2E1	141P142O70	CHIP CAPACITOR	B25V/16V 0.033µF-K
C2E2	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2E5	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2E6	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2E7	141P144O30	CHIP CAPACITOR	F16V 0.22µF-Z
C2E9	154P342O30	CHIP CAPACITOR	CH50V 33pF-J
C2G0	181P350O50	ELECTROLYTIC CAPACITOR	04W 6.3V 470µF-M
C2H6	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C2001	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2004	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2005	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2008	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2009	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2010	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2011	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2012	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2013	141P141O70	CHIP CAPACITOR	B50V 4700pF-K
C2014	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C2015	141P140O90	CHIP CAPACITOR	B50V 1000pF-K
C2016	141P140O90	CHIP CAPACITOR	B50V 1000pF-K
C2017	154P343O10	CHIP CAPACITOR	CH50V 68pF-J
C2018	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2019	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2020	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2021	154P343O10	CHIP CAPACITOR	CH50V 68pF-J
C2022	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2023	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2024	154P343O10	CHIP CAPACITOR	CH50V 68pF-J
C2025	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2026	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2027	154P343O10	CHIP CAPACITOR	CH50V 68pF-J
C2028	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2029	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2030	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2031	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2033	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2034	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2036	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2037	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2038	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2039	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2040	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2041	141P141O70	CHIP CAPACITOR	B50V 4700pF-K
C2042	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C2043	141P140O90	CHIP CAPACITOR	B50V 1000pF-K
C2044	154P343O10	CHIP CAPACITOR	CH50V 68pF-J
C2045	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C2046	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2047	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2048	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C2049	154P343O10	CHIP CAPACITOR	CH50V 68pF-J
C2050	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2051	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2052	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2054	141P144O60	CHIP CAPACITOR	F16/10V 1µF-Z
C2055	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C2056	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2057	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2059	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C2063	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C300	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C301	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C302	141P140O60	CHIP CAPACITOR	B50V 560pF-K
C303	141P141O60	CHIP CAPACITOR	B50V 3900pF-K
C305	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C307	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C350	141P140O10	CHIP CAPACITOR	B50V 220pF-K
C357	141P142O50	CHIP CAPACITOR	B25V/16V 0.022µF-K
C358	141P141O70	CHIP CAPACITOR	B50V 4700pF-K
C379	181P351O30	ELECTROLYTIC CAPACITOR	10V 47µF-M
C3A2	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3B8	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3B9	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C3C0	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C3C1	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3C2	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C3C3	141P146O40	CHIP CAPACITOR	B10V 0.22µF-K
C3D1	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C3D2	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C3D9	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C3E1	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3E4	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C3E6	141P146O40	CHIP CAPACITOR	B10V 0.22µF-K
C3E7	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3E8	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3E9	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3F0	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C3F2	141P142O50	CHIP CAPACITOR	B25V/16V 0.022µF-K
C3F6	141P142O90	CHIP CAPACITOR	B25V/16V 0.047µF-K
C3F7	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C5A0	189P197O20	ELE DOUBLE LAYER CAPACITOR	FM0H473Z
C5A6	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C5A7	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C5B5	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C5B6	154P341O90	CHIP CAPACITOR	CH50V 22pF-J
C5B7	154P341O90	CHIP CAPACITOR	CH50V 22pF-J
C5B8	154P341O70	CHIP CAPACITOR	CH50V 18pF-J
C5B9	154P341O70	CHIP CAPACITOR	CH50V 18pF-J
C5C1	154P342O70	CHIP CAPACITOR	CH50V 47pF-J
C5D2	141P141O70	CHIP CAPACITOR	B50V 4700pF-K
C5D3	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C5D4	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C5E0	141P143O90	CHIP CAPACITOR	F50V 0.022µF-Z
C5E2	141P140O90	CHIP CAPACITOR	B50V 1000pF-K
C5E3	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C5E4	154P343O90	CHIP CAPACITOR	CH50V 150pF-J

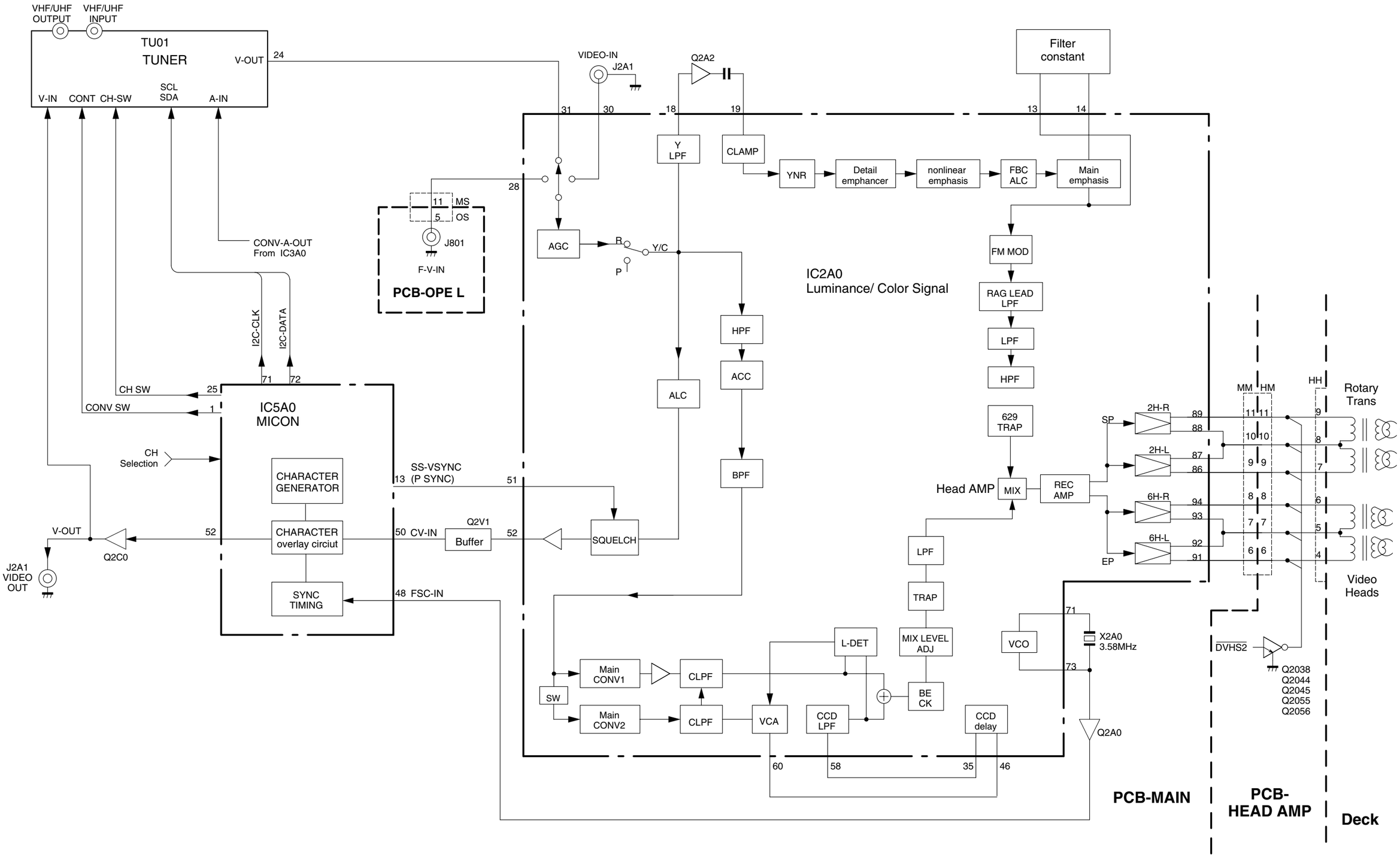
: Critical Components

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
C5E5	141P140O60	CHIP CAPACITOR	B50V 560pF-K
C5E6	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C5J9	141P143O90	CHIP CAPACITOR	F50V 0.022µF-Z
C5L0	141P142O90	CHIP CAPACITOR	B25V/16V 0.047µF-K
C5M2	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C5M3	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C5P0	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C5R1	141P140O80	CHIP CAPACITOR	B50V 820pF-K
C5S0	141P141O70	CHIP CAPACITOR	B50V 4700pF-K
C5S1	141P142O20	CHIP CAPACITOR	B25V/16V 0.012µF-K
C5S3	141P143O00	CHIP CAPACITOR	B25/16V 0.056µF-K
C5S4	141P143O00	CHIP CAPACITOR	B25/16V 0.056µF-K
C5S5	141P140O90	CHIP CAPACITOR	B50V 1000pF-K
C5S6	141P141O30	CHIP CAPACITOR	B50V 2200pF-K
C5S9	141P143O30	CHIP CAPACITOR	B16V 0.1µF-K
C5T5	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C5T6	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C5V2	154P344O30	CHIP CAPACITOR	CH50V 220pF-J
C5V5	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C5D01	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C5D02	141P144O20	CHIP CAPACITOR	F16V 0.1µF-Z
C5D04	141P143O90	CHIP CAPACITOR	F50V 0.022µF-Z
C5D15	154P341O70	CHIP CAPACITOR	CH50V 18pF-J
C5D16	154P341O90	CHIP CAPACITOR	CH50V 22pF-J
C8A1	141P142O10	CHIP CAPACITOR	B25V 0.01µF-K
C901	189P193O30	C-M-P-AC	AC125V 0.068µF-M
C902	189P193O30	C-M-P-AC	AC125V 0.068µF-M
C908	189P215O90	AC CERAMIC CAPACITOR	AC250V E2200pF-M
C912	181P732O10	ELECTROLYTIC CAPACITOR	04W 10V 1000µF-M
C915	181P355O10	ELECTROLYTIC CAPACITOR	04W 50V 1µF-M
C916	181P734O30	ELECTROLYTIC CAPACITOR	04W 16V 680µF-M
C917	181P737O50	ELECTROLYTIC CAPACITOR	04W 50V 22µF-M
C918	181P737O50	ELECTROLYTIC CAPACITOR	04W 50V 22µF-M
C919	141P143O80	CHIP CAPACITOR	F50V 0.01µF-Z
C920	181P731O90	ELECTROLYTIC CAPACITOR	04W 10V 470µF-M
C921	181P350O40	ELECTROLYTIC CAPACITOR	6.3V 330µF-M
C926	181P352O30	ELECTROLYTIC CAPACITOR	16V 47µF-M
C927	181P352O30	ELECTROLYTIC CAPACITOR	16V 47µF-M
C929	181P352O80	ELECTROLYTIC CAPACITOR	04W 16V 1000µF-M
C930	181P736O70	ELECTROLYTIC CAPACITOR	04W 35V 330µF-M
C936	181P351O50	ELECTROLYTIC CAPACITOR	10V 220µF-M
C950	181P355O10	ELECTROLYTIC CAPACITOR	04W 50V 1µF-M
C990	181P732O10	ELECTROLYTIC CAPACITOR	04W 10V 1000µF-M
C991	181P350O40	ELECTROLYTIC CAPACITOR	6.3V 330µF-M
C992	181P351O50	ELECTROLYTIC CAPACITOR	10V 220µF-M
C9Y1	189P215O90	AC CERAMIC CAPACITOR	AC250V E2200pF-M
C9Y2	189P215O90	AC CERAMIC CAPACITOR	AC250V E2200pF-M
	SWITCHES		
S5B1	432P166O10	KEY BOARD SWITCH	RESET
S5K0	439P045O10	SWITCH	S-SW MPU10184MLBO
S5K1	439P045O10	SWITCH	D-SW MPU10184MLBO
S801	432P203O30	KEY BOARD SWITCH	LINK
S802	432P203O30	KEY BOARD SWITCH	REC
S803	432P203O30	KEY BOARD SWITCH	PAUSE
S804	432P203O30	KEY BOARD SWITCH	PLAY
S805	432P203O30	KEY BOARD SWITCH	STOP
S811	432P203O30	KEY BOARD SWITCH	D-VHS
S812	432P203O30	KEY BOARD SWITCH	EJECT
S813	432P203O30	KEY BOARD SWITCH	SP/EP
S814	432P203O30	KEY BOARD SWITCH	POWER
S820	439P041O10	JOG SWITCH	JOG/SHUTTLE
	MISCELLANEOUS		
	621C525O10	LED HOLDER	(D5B4)
	621C564O10	LED HOLDER R	(Q5A0)
	621C564O10	LED HOLDER R	(Q5A1)
	621C527O10	PHOTO HOLDER	(Q5A2)
	243C160O30	CARD LEAD WIRE	(EX MX) 19PIN L=120
	243C155O10	CARD LEAD WIRE	(JG OG) 9PIN L=85
	243C193O50	CARD LEAD WIRE	(MA DA) 7PIN L=160
	243C193O30	CARD LEAD WIRE	(MD DD) 7PIN L=120
	243C157O20	CARD LEAD WIRE	(MJ OJ) 13PIN L=100
	243C158O30	CARD LEAD WIRE	(MS OS) 15PIN L=120
F901	283D130O30	FUSE	S1.6A 125V
J2A1	440B134O10	PIN JACK BOARD	6PIN
J801	451C207O30	RCA PIN JACK	
PC901	268P058O10	PHOTO COUPLER	ON3131-R
PC902	268P058O10	PHOTO COUPLER	ON3131-R
Q5A0	268P076O20	PHOTO TRANSISTOR	SPS-1119C-BC-T
Q5A1	268P076O20	PHOTO TRANSISTOR	SPS-1119C-BC-T
Q5A2	268P076O20	PHOTO TRANSISTOR	SPS-1119C-BC-T
Q5A6	268P092O10	PHOTO TRANSISTOR	PT492FK1
Q5A7	268P092O10	PHOTO TRANSISTOR	PT492FK1
Q5A8	268P076O20	PHOTO TRANSISTOR	SPS-1119C-BC-T
Q5A9	268P076O20	PHOTO TRANSISTOR	SPS-1119C-BC-T
Q5B0	268P076O20	PHOTO TRANSISTOR	SPS-1119C-BC-T
RV901	265P100O20	VARISTOR	ERZV10D271CS
TU01	295P515O10	TUNER	VD025AW
V8A0	253P157O10	FLUOR DISPLAY TUBE	HNV-10SS20T
X2A0	285P147O60	CRYSTAL RESONATOR	3.579545MHz
X5A0	285P054O10	CRYSTAL RESONATOR	32.768kHz
X5A1	285P368O40	CRYSTAL RESONATOR	12.000MHz
X5D01	285P368O40	CRYSTAL RESONATOR	12.000MHz
Z5A1	939P662O20	PREAMP UNIT	GP1U293Q
	PRINTED CIRCUIT BOARD ASSY'S		
	927C338O02	1394/D-VHS PCB ASSY	
	927C336O01	HEAD AMP PCB ASSY	
	925B159O02	MAIN PCB ASSY	
	928D600O01	OPE L PCB ASSY	
	928D601O01	OPE R PCB ASSY	



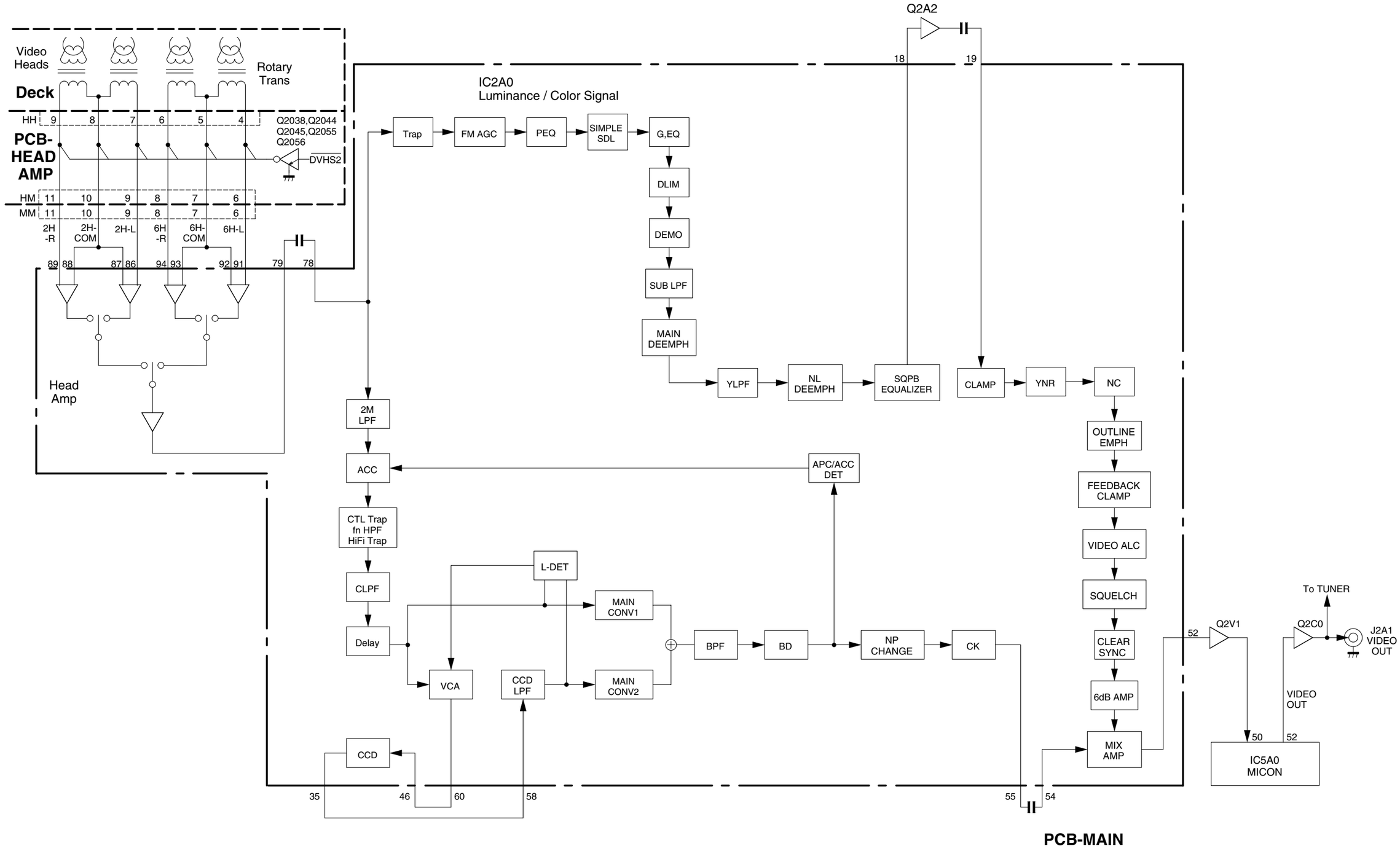
HS-HD1100U BLOCK DIAGRAM (Digital Signal)

Luminance Record, Chroma Record HS-HD1100U (Analog Signal)



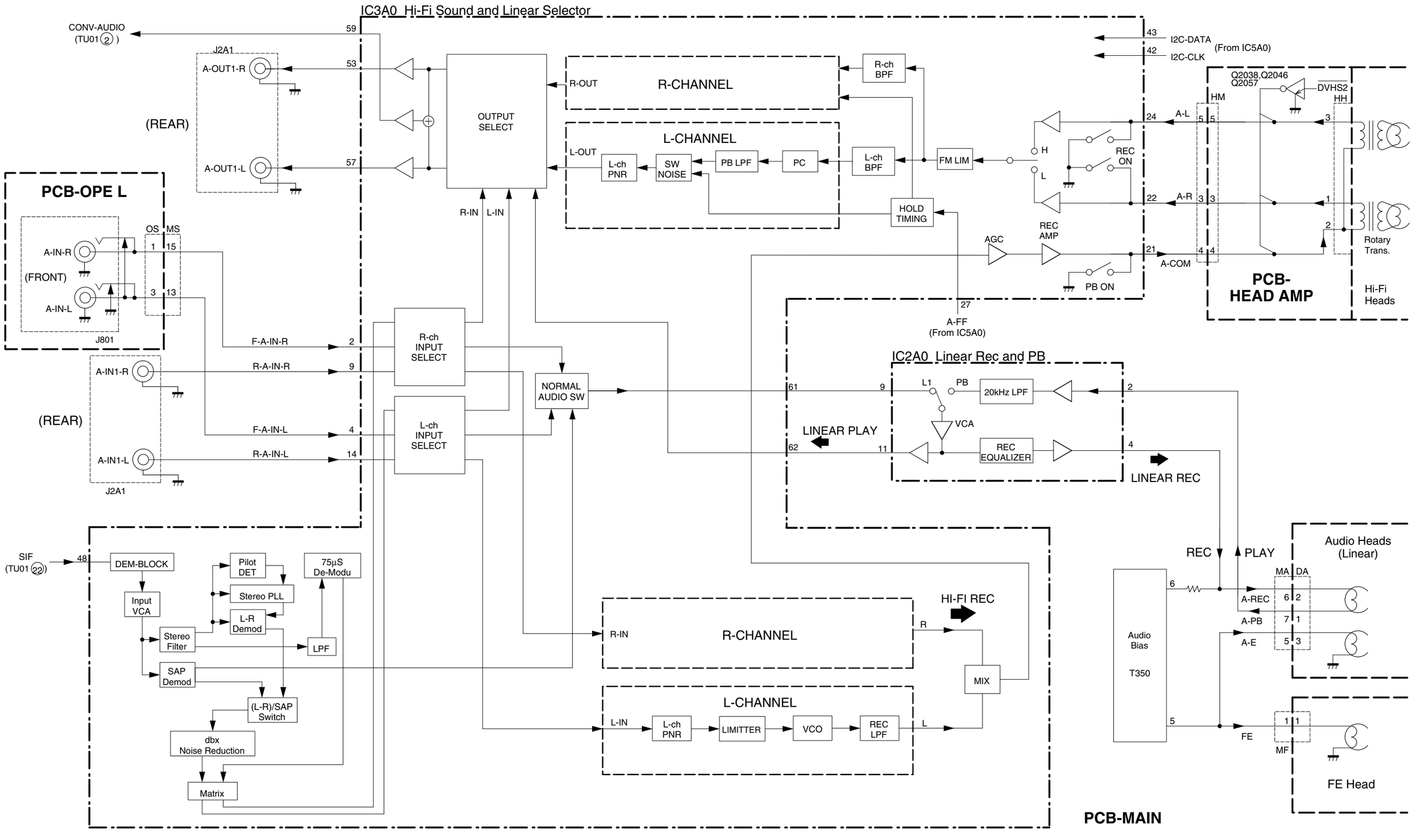
(HD1100U02052)

Luminance Playback, Chroma Playback HS-HD1100U (Analog Signal)



(HD1100U02053)

Hi-Fi and Linear Sound HS-HD1100U (Analog Signal)



(HD1100U02054)

Power,Timer,Mechanical Control
HS-HD1100U (Analog Signal)

PCB-MAIN

HEATER +
HEATER -
-30V
IC8A0 (27)
V8A0 Display
Q991,Q990
STBY3.3 (PCB-1394/D-VHS)
Q985
CP-MOTOR-V
TU01
+30V
MOTOR-V
BB
AC 120V
D901
T901
D911
D990
D951
D910
D927
D908
D913
D914
Q908
D912
D909
D926
Switching Regulator
Q901
Q903
Protector
Q9P3
Q9P4
D907
D918
D917
Q906
Q910
Q905
SW9
Q907 PWV
D5 (PCB-1394/D-VHS)
STBY5
D920
Q904
Q909
SW5
Photo-coupler PC901
Photo-coupler PC902
IC901
STBY5
D5D0
Q5A5
Q5A3
Q5B1
RESET S5B1
C5A2 BACKUP
from IC2A0 (84)
IC5A0
MICROCOMPUTER
PWV
PWSV
Vcc
RESET
VENV
DR-FG
DR-PG
DR-OUT
CP-OUT
CP-FG
PC0
PC1
PC2
CP-REV
STBY5
PC0 : Q5A8
PC1 : Q5A9
PC2 : Q5B0
Mode SW
O-L
O-UL
IC5A4
IN 1
IN 2
OUT 1
OUT 2
2,6,8
RIS
SW5
Q5A2
REC Inhibit
CTL(+)
CTL-
CTL+
CTL(-)
SS
ES
Q5A7 Start Sensor
Q5A6 End Sensor
SU-SENS
TU-SENS
Q5A1 Take Up Sensor
Q5A0 Supply Sensor
D-FG
D-PG
D-OUT
CP-M-V
CP-REV
LM
Loading Motor M571
Control Head
MA DA
ML
MD DD
MC DC
M572
CP-OUT
CP-FG
Capstan Motor
Drum Motor
M570

DECK

PCB-OPE L

POWER EJECT D-VHS EP/SP
KEY1
KEY2
KEY3
KEY4
P11
OS
MS

Jog Dial/ Shuttle ring

JOG1
JOG2
SHT1~4
JG OG
OJ MJ

PCB-JOG

Display V8A0

KEY1 P9 KEY4 P10 KEY2
MJ
OJ
IEEE 1394
PLAY
STOP
REC/ OTR/ REC LENGTH
PAUSE/ START TIME

PCB-OPE R

Front Key

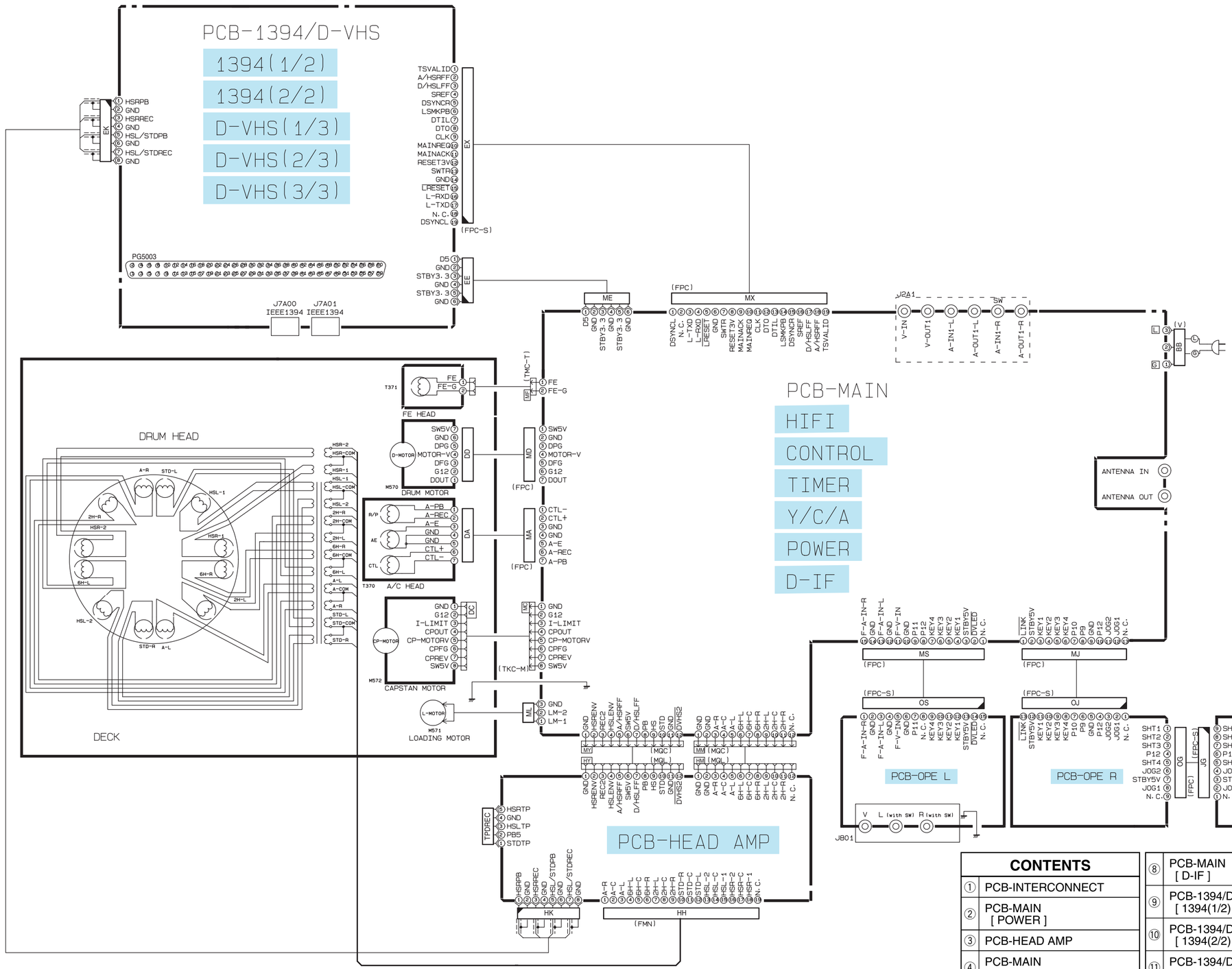
IC8A0
1G~10G
P1~P12
KEY1~KEY4
VDD
STRB
SCLK
VEE
SIN
SOUT
14,38
STBY5
-30V
from IC5D01 (68)

IC5A1 Memory
IC2A0 (62)
IC3A0 (42)
TU01
IC3A0 (43)
TU01
IC2A0 (63)
IC5D01 (71)
IC5D01 (69)
I2C-CLK
I2C-DATA
FLDCS
Sub-CLK
Sub-DATA
Sub-SI
JOG1
JOG2

STBY5
DEMO
Z5A1
Photo-recepter
REMO
A-ENV
AMODE
from IC3A0 (28)
from IC3A0 (56)
Protect of Power (SW9,SW5)
PRT

(HD1100U02055)

PCB-INTERCONNECT



SCHEMATIC DIAGRAMS

NOTE
1. Each voltage should be within ± 20% of the DC voltages measured with a digital voltmeter.
2. The voltages parenthesised on SP recording mode.
   While those without parenthesised on SP play back mode.
3. Waveforms were taken with standard color bar signal.
4. TP6A, etc. show Test Points.
5. Capacitors

Value	Not indicated	{ pF, for numbers more than 1 μF, for numbers less than 1	
Dielectric Strength	Not indicated : 50V		
Tolerance	Not indicated = ±10% { No Tolerance is indicated for electrolytic capacitors and ± 20%		
	G = ± 2%	N = ± 30%	Q = + 30% − 10%	C = ± 0.25pF D = ± 0.5pF
	J = ± 5%			
	K = ± 10%	P = + 100% − 0%	Z = + 80% − 20%	F = ± 1pF
	M = ± 20%			G = ± 2pF

Sort

I	Parts except for chips	Not indicated	: Ceramic capacitor
		(MF)	: Polyester capacitor
		(PP)	: Polypropylene film capacitor
		(ALM)	: Aluminus electrolytic capacitor
		(TF)	: Twin film capacitor
		(SC)	: Semiconductor ceramic capacitor
		(MP)	: Metalized paper capacitor
		(MPP)	: Metalized plastic film capacitor
		(MMF)	: Metalized polyester capacitor
		(MF,PP)	: Polyester polypropylene film capacitor
		(PS)	: Styrol capacitor
		(TAN) or (TANT)	: Tantalum capacitor
		⊣⊢	: Electrolytic capacitor
		(BP) or (NP)	: Non polarized electrolytic capacitor
II	Chips	Not indicated	: Ceramic capacitor chip
		⊣⊢	: Electrolytic capacitor chip
		(BP) or (NP)	: Non polarized electrolytic capacitor chip

Characteristic (only ceramic capacitor)	Not indicated : F or B (high dielectric percentage) CH,SL,etc : Temperature compensating types	

6. Resistors

Value	Not indicated = Ω K = kΩ (1000Ω) M = MΩ (1000kΩ)	
Wattage	Parts except for chips	Not indicated = 1/4W or 1/6W
	Chips	Not indicated = 1/10W
Tolerance	Not indicated = ± 5% D = ± 0.5% F = ± 1% J = ± 5% K = ± 10%	

Sort

I	Parts except for chips	Not indicated	: Carbon resistor
		(S)	: Fixed composition resistor
		(MB)	: Metal oxide film resistor (type B)
		(CE)	: Cemented resistor
		(W)	: Wire wound resistor
		(M)	: Metal film resistor
		(MPC)	: Metal plate cement resistor
		(ML)	: Metal liner resistor
II	Chips	Not indicated	: Chip resistor

7. This is basic schematic diagram.
   Some sets may be subject to modification according to engineering imporovement.

SPECIFIC SYMBOL

Zener Diode	Fusible Resistor
Varicap	Crystal unit
Positive Thermistor	Air Gap
Thermistor	Part (resistor) attached on the copper-foil side of PCB
Photo Diode	Ceramic filter
LED	

8. Correspondence of the units in the Schematic Diagrams to the SI units.

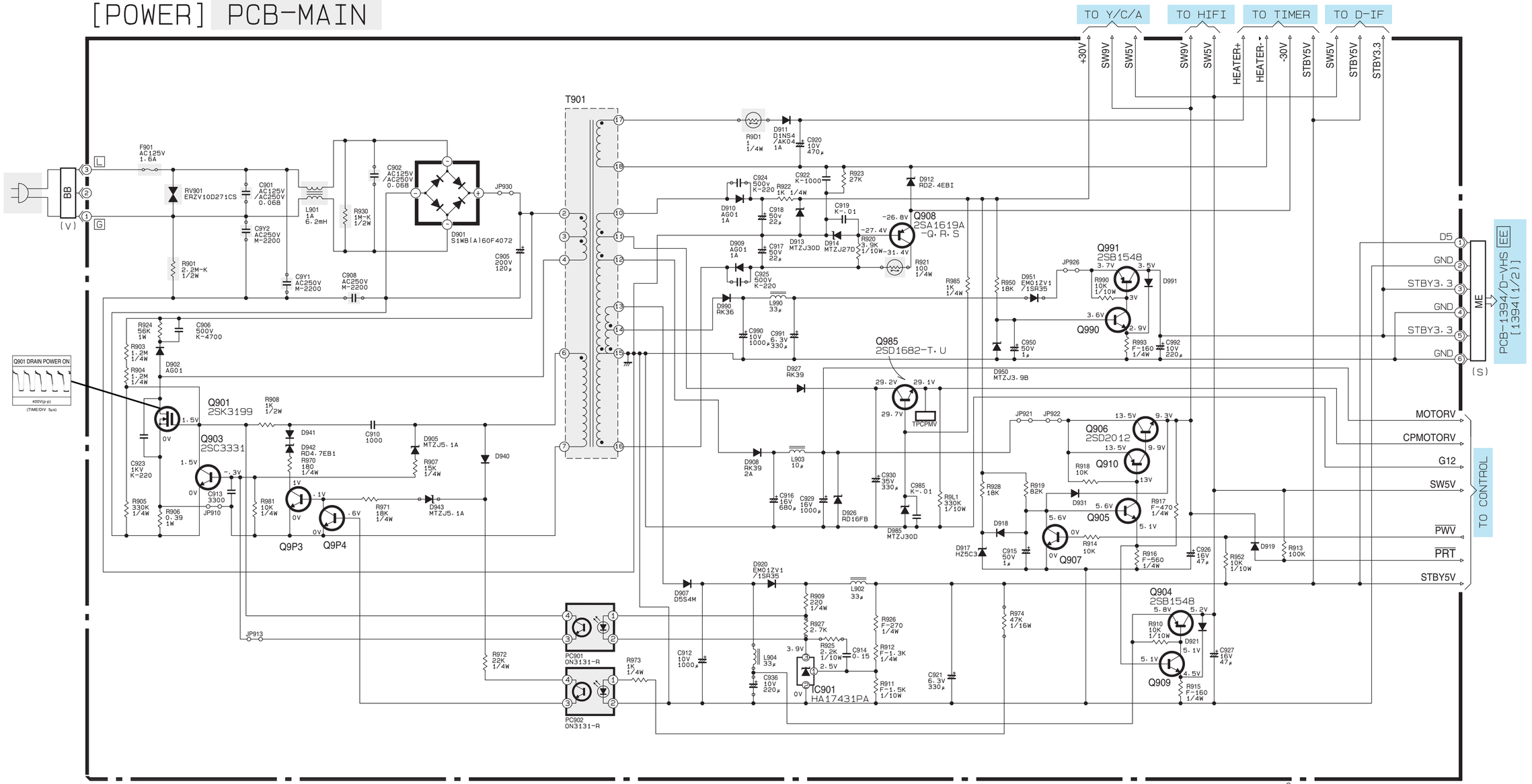
	Schematic Diagram	SI
Kiro	K	k
Hertz	HZ	Hz
Pico	P	p

SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE IN THE SERVICE MANUAL.
DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

CONTENTS

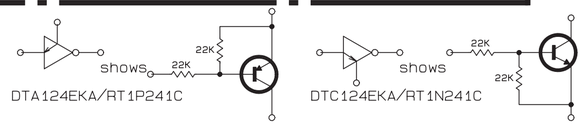
①	PCB-INTERCONNECT
②	PCB-MAIN [POWER]
③	PCB-HEAD AMP
④	PCB-MAIN [HIFI]
⑤	PCB-MAIN [Y/C/A]
⑥	PCB-MAIN [CONTROL] REMOTE HAND UNIT
⑦	PCB-MAIN [TIMER] PCB-OPE L PCB-OPE R PCB-JOG
⑧	PCB-MAIN [D-IF]
⑨	PCB-1394/D-VHS [1394(1/2)]
⑩	PCB-1394/D-VHS [1394(2/2)]
⑪	PCB-1394/D-VHS [D-VHS(1/3)]
⑫	PCB-1394/D-VHS [D-VHS(2/3)]
⑬	PCB-1394/D-VHS [D-VHS(3/3)]
⑭ ~ ⑮	PRINTED CIRCUIT BOARD PARTS LAYOUT

[POWER] PCB-MAIN

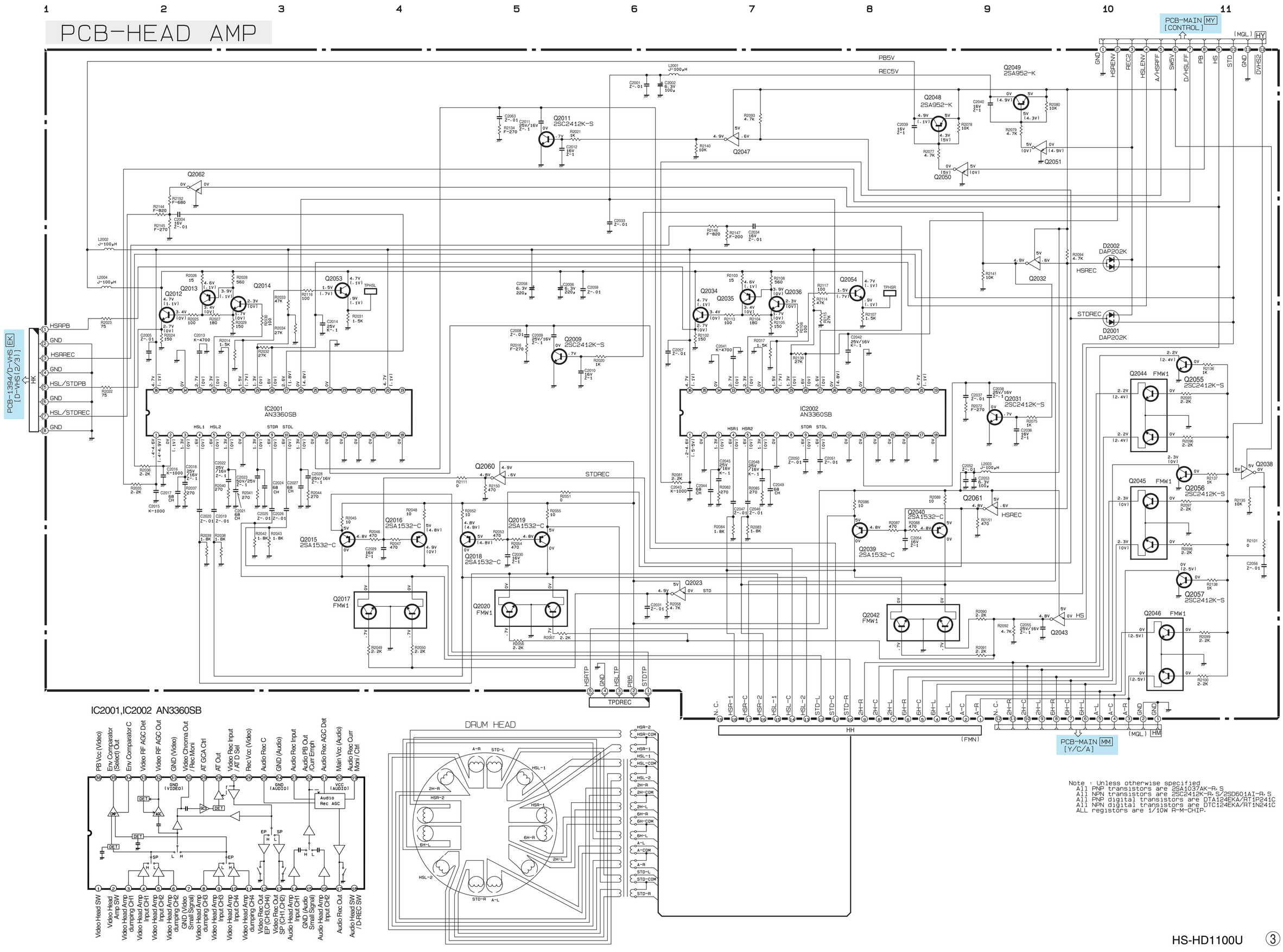


NOTE

UNLESS OTHERWISE SPECIFIED
ALL DIODES ARE 1SS254/1SS133
ALL NPN TRANSISTORS ARE 2SC1740S-E/2SC5395-G
ALL PNP TRANSISTORS ARE 2SA933S-R,S/2SA1993-E,F



PCB-HEAD AMP



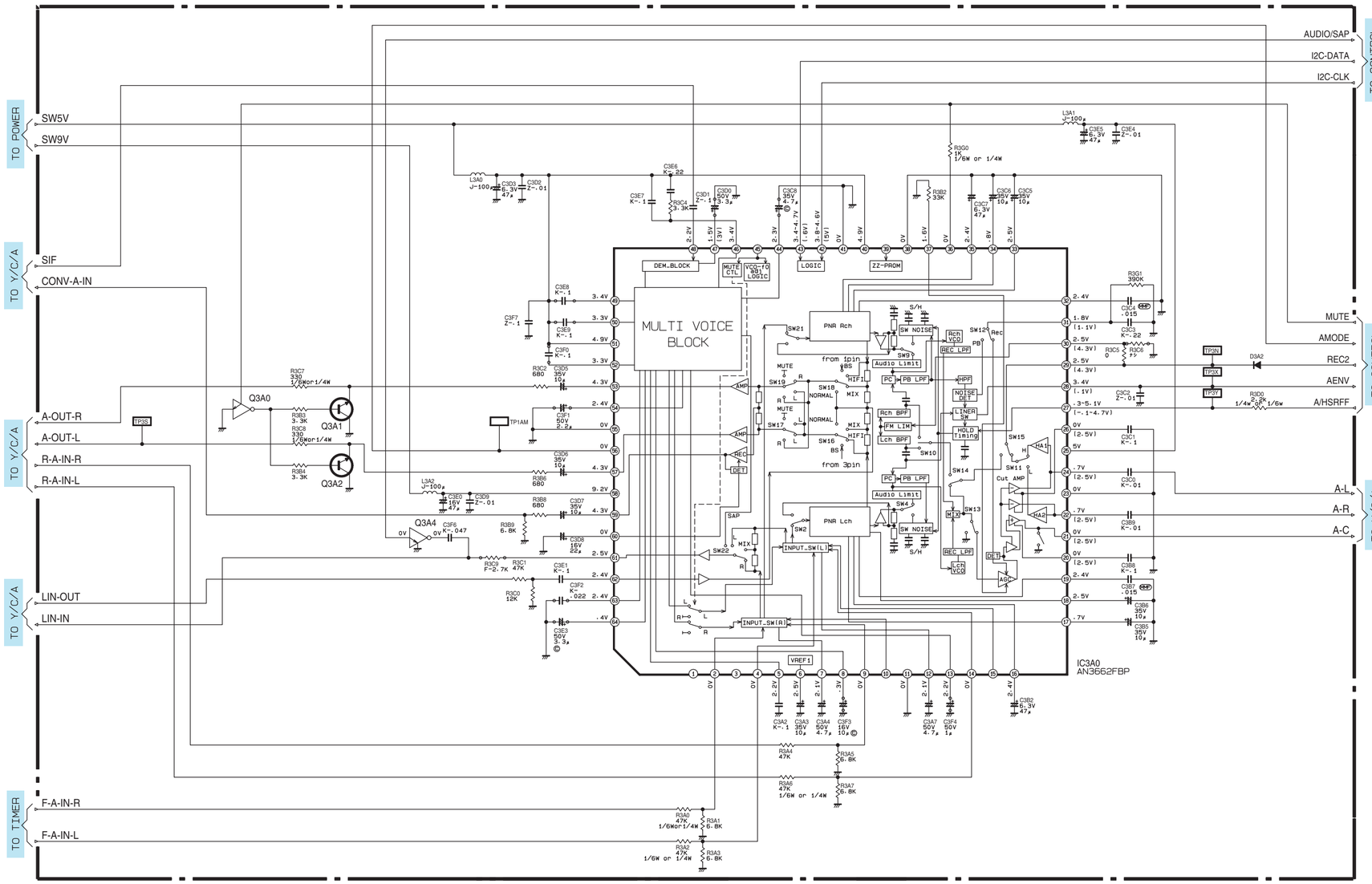
IC2001,IC2002 AN3360SB

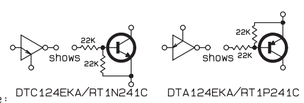
PB Vcc (Video)
Env Comparator (Select) Out
Env Comparator C
Video RF AGC Det
Video RF AGC Out
GND (Video)
Video Chroma Out / Rec Moni
AT GCA Ctrl
AT Out
Video Rec Input / AT D Sel
Rec Vcc (Video)
Audio Rec C
GND (Audio)
Audio Rec Input
Audio PB Out /Curr Emph
Audio Rec AGC Det
Main Vcc (Audio)
Audio Rec Curr Moni / Ctrl
Audio Rec AGC
Video Head SW
Video Head Amp SW
Video Head Amp dumping CH1
Video Head Amp Input CH1
Video Head Amp Input CH2
Video Head Amp dumping CH2
GND (Video Small Signal)
Video Head Amp dumping CH3
Video Head Amp Input CH3
Video Head Amp Input CH4
Video Head Amp dumping CH4
Video Rec Out EP (CH3,CH4)
Video Rec Out SP (CH1,CH2)
Audio Head Amp Input CH1
GND (Audio Small Signal)
Audio Head Amp Input CH2
Audio Rec Out
Audio Head SW / D-REC SW

DRUM HEAD

Note : Unless otherwise specified
All PNP transistors are 2SA1037AK-R,S
All NPN transistors are 2SC2412K-R,S/2SD601AI-R,S
All PNP digital transistors are DTA124EKA/RT1P241C
All NPN digital transistors are DTC124EKA/RT1N241C
ALL registors are 1/10W R-M-CHIP.

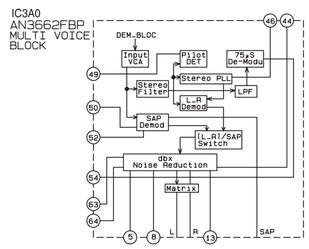
[HIFI] PCB-MAIN





Note: DTC124EKA/RT1N241C DTA124EKA/RT1P241C

Unless otherwise specified.
All PNP transistors are 2SA1037AK-R, S
All NPN transistors are 2SC2412K-R, S/2SD601AI-R, S
All diodes are 1SS254
All resistors are 1/16W
All PNP digital transistors are DTA124EKA/RT1P241C
All NPN digital transistors are DTC124EKA/RT1N241C



[Y/C/A] PCB-MAIN

IC2A0 ⑦ PLAY

IC2A0 ⑨ PLAY

IC2A0 ⑫ PLAY

TP2A PLAY

TO POWER

TO HIFI

TO CONTROL

TU01

TU01 PIN NO.	
1	–
2	A-IN
3	CHSW
4	MB
5	CONT
6	V-IN
7	–
8	AGC
9	N. C
10	AS
11	SCL
12	SDA
13	N. C
14	+B
15	FSC
16	TU
17	T. P
18	IF-OUT
19	–
20	–
21	A-OUT
22	SIF
23	AFT
24	V-OUT
25	–

TSREC
D/HSLFF
VENV
HSEL
TO CONTROL

PCB-HEAD AMP [MM]
N. C.
CH-R
CH-C
CH-L
CH-R
CH-C
CH-L
A-L
A-C
A-R
GND
GND

TO HIFI
A-R
A-C
A-L

TO CONTROL
LMUTE
REC2

IC2A0
HA118217NF

Q2A0
Q2V1
Q2C0
2SA933S-R, S
Q2C2
Q2A7
Q2A2

Q355 2SA952-K
Q356
Q351 2SD734F
Q352 2SC3331-S, T, U
Q354
Q353 2SC3331-S, T, U

T360 960720174/B-161-001

T371 FE HEAD
T370 AC HEAD

TP2H square hole
TP2A square hole
TP2B
TP2J square hole
TP2J PLAY
TP5S
TP5T
TP6T
TP7T
TP9T
TP11
TP12

V-IN
V-OUT1
A-IN1-L
A-IN1-R
A-OUT1-L
A-OUT1-R

TO CONTROL
TO TIMER
TO HIFI

IC2A0 ⑩ REC
IC2A0 ⑬ REC
IC2A0 ⑭ PLAY
IC2A0 ⑮ REC

Recording of Luminance Signal
Playback of Luminance Signal
Recording of Color Signal
Playback of Color Signal

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS ARE 1/16W
ALL DIODES ARE 1SS254
ALL PNP TRANSISTORS ARE
2SA1037AK-R, S
ALL NPN TRANSISTORS ARE
2SC2412K-R, S/2SD601AI-R, S

PNP digital transistors are
DTA124EKA/RT1P241C
NPN digital transistors are
DTC124EKA/RT1N241C

DTA124EKA/RT1P241C
DTC124EKA/RT1N241C

[CONTROL] PCB-MAIN

TO D-IF | TO D-IF | TO Y/C/A | TO TIMER

MCCKS, SUB-CLK, SUB-DATA, SUB-SI, DVRS, DSYNCI, DSYNCR, ERR, SREF, ERR_R, LSMKPB, CSYNC, SSVSYNC, 2FH, I2C-DATA, I2C-CLK, CVOUT, CVIN, FSC, FLDCS, JOG1, JOG2, SUB-SI, SUB-DATA, SUB-CLK

Q5A8 SPS-1119C-BC-T1 | Q5A9 SPS-1119C-BC-T1 | Q5B0 SPS-1119C-BC-T1

Q5A0 SPS-1119C-BC-T1 | Q5A2 SPS-1119C-BC-T1 | Q5A1 SPS-1119C-BC-T1

Q5A6 PT492FK1 | Q5A7 PT492FK1

IC5A4 TA7291S

IC5A5 TC4053BF

IC5A0 M37760MFH7B9GP

Q5M0 2SC3052-G

Q5P0 | Q5P1

Q5A3 2SA1235-E,F | Q5A5 | Q5B1 2SA1037AK-S

Q5L0 2SC2412K-S

IC5A1 BR24C16F-E2 CAT24WC16J-TE13

Z5A1 GP1U293Q

TP-RESET | RESET SW81

AUDIO/SAP, I2C-DATA, I2C-CLK → TO HIFI

LMUTE, REC2 → TO Y/C/A

LM-1, LM-2, GND

STBY5V, MOTORV, SW5V, PRV, PRT, G12, CPMOTORV, DOUT, G12, CPFG, MOTORV, DPG, GND, SW5V, SW5V, CPREV, CPFG, CPMOTORV, CPOUT, I_LIMIT, G12, GND, CTL-, CTL+, AENV, AMODE, MUTE, AHSRFF, REC2, VENV, HSEL, TSREC, DHSLFF, CONVSW, AFTV, CHSW, D/HSLFF, A/HSRFF, RESET, PB, HS, STD, DVRS2, DVRS2, GND, STD, HS, PB, D/HSLFF, SW5V, A/HSRFF, HSLENV, REC2, HSPENV, GND

TO POWER | MD | MC | TO Y/C/A | TO HIFI | TO Y/C/A | TO Y/C/A | TO D-IF | TO D-IF | (MQL) | PCB-HEAD AMP HV | MY

Drum Servo System
Capstan Servo System

L-MOTOR M571 LOADING MOTOR

D-MOTOR M570 DRUM MOTOR — SW5V, GND, DPG, MOTOR-V, G12, DOUT — DD

CP-MOTOR M572 CAPSTAN MOTOR — CP-MOTORV, CPFG, CPREV, SW5V, GND, G12, I-LIMIT, CPOUT — DC

CONNECTOR MD Ⅱ PLAY — 4.8Vp-p (TIME/DIV 0.5ms)

CONNECTOR MD Ⅱ PLAY — 4.8Vp-p (TIME/DIV 10ms)

CONNECTOR MD Ⅱ PLAY — 4.8Vp-p (TIME/DIV 0.2ms)

NOTE:
All registors are 1/6 or 1/4W unless otherwise specified.
All diodes are 1SS254 unless otherwise specified.
All NPN transistors are 2SC2412K-R S/2SD601AI-R S unless otherwise specified.
All PNP transistors are 2SA1037AK-R S unless otherwise specified.
All PNP digital transistors are DTA124EKA/RT1P241C
All NPN digital transistors are DTC124EKA/RT1N241C

HS-HD1100U REMOTE HAND UNIT

IC1 M34570M4-095FP

BATT 1.5VX2 | D1 EL-1L7 | R1 RD930C | C1 3.3V 100μ | R2 | 2SD966 2SC3445 | C2 0.47μ | X1 4MHz | C3 0.1μ

SW JS0 JS1 JS2 JS3 JS4 JS5 JS6 JS7 — OFF:VTR ON:TV

KEY No.

KEY NO.	FUNCTION
K01	VCR POWER
K02	EJECT
K03	CH ▲
K04	CH ▼
K05	VOL ▲
K06	VOL ▼
K07	TV POWER
K08	
K09	1
K10	4
K11	5/CM SKIP
K12	2
K13	6
K14	3
K15	MUTE
K16	
K17	7
K18	QUICK PROGRAM/VCR Plus+
K19	PLAY
K20	8
K21	10
K22	9
K23	INPUT
K24	

KEY NO.	FUNCTION
K25	REC
K26	REW
K27	PAUSE
K28	STOP
K29	DISPLAY
K30	FF
K31	IEEE1394 INPUT
K32	
K33	AUDIO/VIDEO
K34	CANCEL ◀◀
K35	INDEX −
K36	ADJ +
K37	INDEX +
K38	ENTER ▶▶
K39	MENU
K40	
K41	VCR/TV
K42	
K43	
K44	ADJ −
K45	
K46	
K47	SP/EP
K48	

IC5A4 TA7291S

Vcc, Vreg, Reg., THERMAL PROTECTION, Vs, OUT1, OUT2, IN1, IN2, GND

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ : High impedance.
Note : Input signal activate at "H".

IC5A1 BR24C16F-E2/CAT24WC16J-TE13

16kbit EEPROM ARRAY; Address Decoder; 11bit; Slave Word Address Resister; Data Resister; 8bit; START; STOP; Control Logic; ACK; High-Voltage Generation Logic; Power-Voltage Detect; A0, A1, A2, GND, Vcc, WP, SCL, SDA

Z5A0 GP1U293Q

AMP, Limiter, B.P.F, Demodulator, Integrator, Comparator; R1; Vcc, GND, VOUT

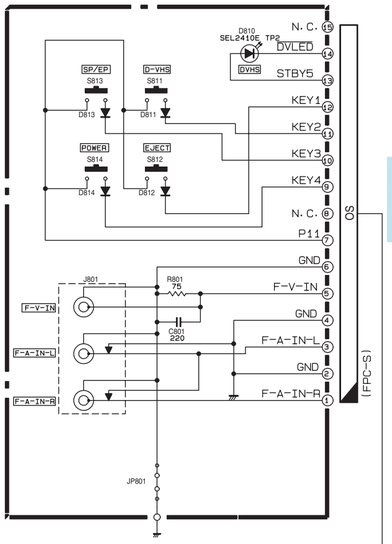
DRUM MOTOR

MOTOR CURRENT OUT, Vcc (+5V), GND, VCTL, PG, FG, MOTOR GND; M56747AFP; CORE

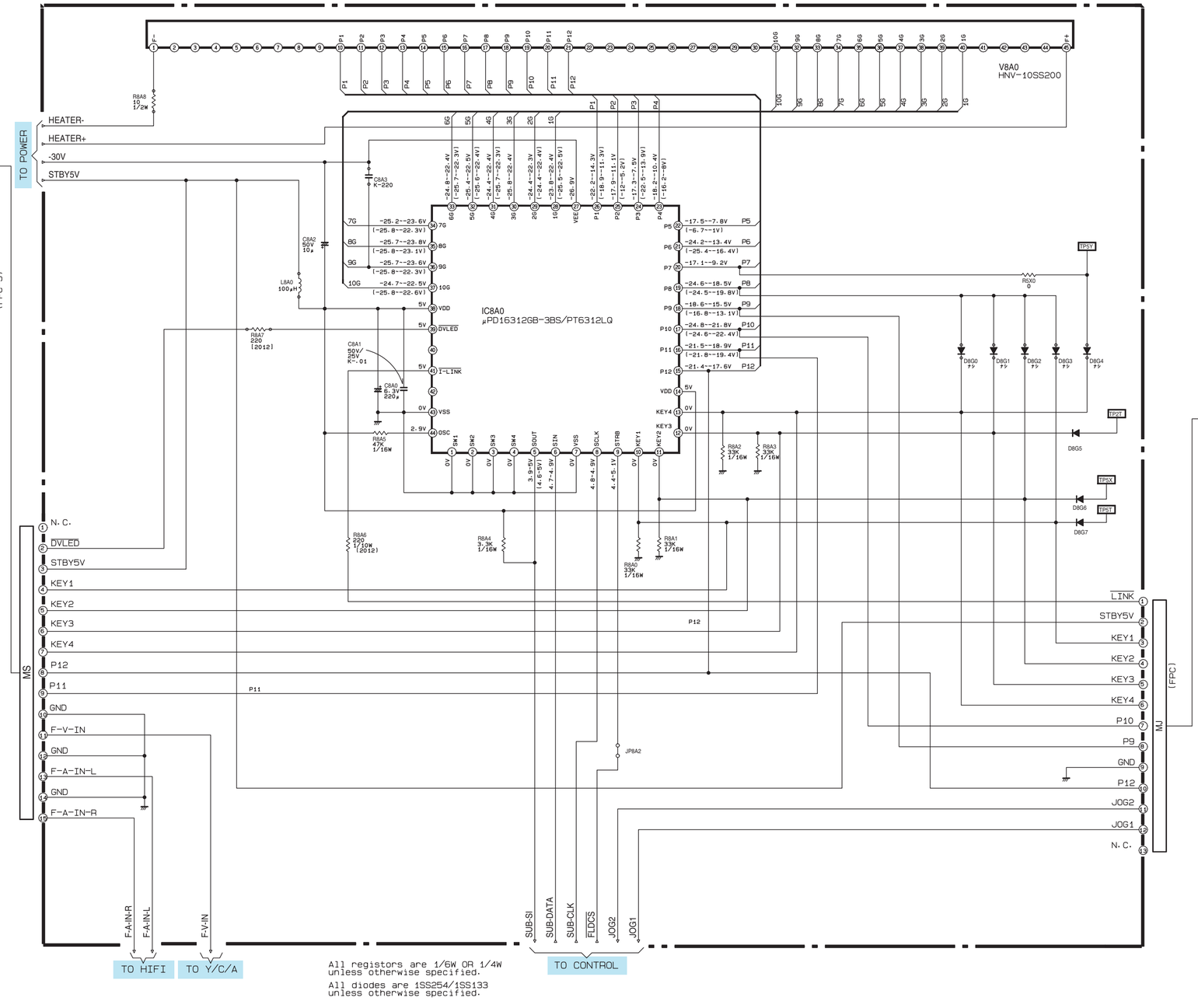
CAPSTAN MOTOR

IC M63012AFP; F/R, Vcc (5V), FGOUT, SGND, MGND, VCTL, V LIMIT, Vco (12V)

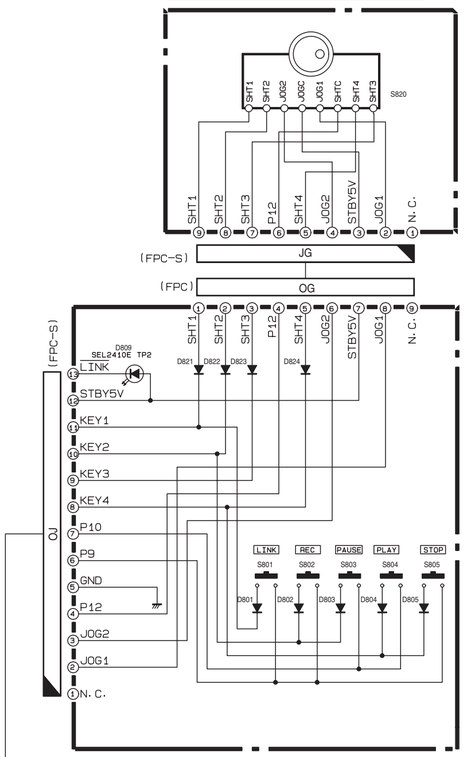
PCB-OPE L



[TIMER] PCB-MAIN

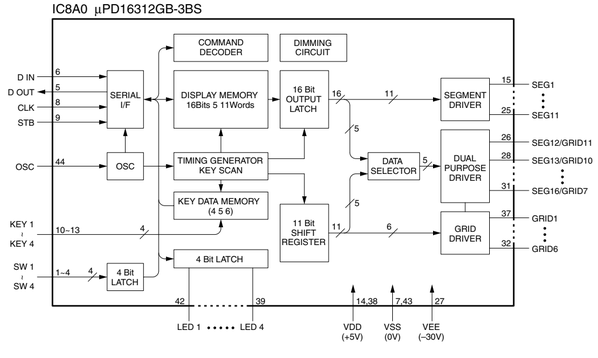


PCB-JOG



PCB-OPE R

IC8A0 µPD16312GB-3BS



TO CONTROL: MC2CS, SUB-CLK, SUB-DATA, SUB-SI, DVHS
TO CONTROL: PB, DVHS2, HS, STD, RESET
TO CONTROL: ERR, ERR_R, DSYNCL, SREF, LSMKPB, DSYNCR
TO POWER: SW5V, STBY5V, STBY3.3
TO CONTROL: D/HSLFF, A/HSRFF

TP3V
R5D28 0

L5D01 J-33μH
R5D25 100K R5D24 100K R5D85 5.6K 1/5W or 1/4W
R5D23 10K
R5D13 10K 1/6W or 1/4W
JP5D01

IC5D01
M37777MFH101GP
SWTR, MC2CS, VSS, VREFOUT, VREFIN, VSS, VCC, VCC
VCCS, VCCLK, VCDATA, NAR, BUSY, L-RXD, ERR-R, ERRDATE, TSVALID, SUB-CLK, SUB-DATA, SUB-SI, DSCLK, DDATAIN, DDATAO, N.C., N.C., PB, DVHS, HS, STD, N.C., D-VHS, MAINREQ, LRESET, RESET3V, MAINACK, SW5, RESET2, VDRES
RESET, VSS, XOUT, XIN, VCC, VCC, GND, GND
R5D10 10K
R5D08 820
R5D07 1M
XSD01 12.000MHZ
C5D16 18 CH
C5D15 18 CH
C5D04 Z-.022
C5D03 6.3V 47μ
C5D08 6.3V 47μ
L-TXD
R5D22 3.3K

IC5D02
SN74ACT244NSR
C5D01 25V/16V Z-.1

IC5D03
SN74LVTH541NSR
R5D86 100K
C5D02 25V/16V Z-.1
R5D03 3.3K 1/6W or 1/4W
Q5D01

TSVALID, A/HSRFF, D/HSLFF, SREF, DSYNCR, LSMKPB, DTIL, DTO, CLK, MAINREQ, MAINACK, RESET3V, SWTR, GND, LRESET, L-RXD, L-TXD, N.C., DSYNCL

MX
(FPC)

PCB-1394/D-VHS EX
[1394(1/2)]

Note: Unless otherwise specified.
All PNP transistors are 2SA1037AK-R, S
All NPN transistors are 2SC2412K-R, S/2SD601AI-R, S
All diodes are 1SS254/1SS133
All resistors are 1/16W
All PNP digital transistors are DTA124EKA/RT1P241C
All NPN digital transistors are DTC124EKA/RT1N241C

IC5D02 SN74ACT244NSR

1OE	1	20	Vcc
1A1	2	19	2OE
2Y4	3	18	1Y1
1A2	4	17	2A4
2Y3	5	16	1Y2
1A3	6	15	2A3
2Y2	7	14	1Y3
1A4	8	13	2A2
2Y1	9	12	1Y4
GND	10	11	2A1

FUNCTION TABLE

INPUT OE	INPUT A	OUTPUT Y
L	H	H
L	L	L
H	X	Z

H : HIGH LEVEL
L : LOW LEVEL
X : IMMATERIAL
Z : HIGH IMPEDANCE

IC5D03 SN74LVTH541NSR

OE1	1	20	Vcc
A1	2	19	OE2
A2	3	18	Y1
A3	4	17	Y2
A4	5	16	Y3
A5	6	15	Y4
A6	7	14	Y5
A7	8	13	Y6
A8	9	12	T7
GND	10	11	Y8

FUNCTION TABLE

INPUT OE1	INPUT OE2	INPUT A	OUTPUT Y
L	L	L	L
L	L	H	H
H	X	X	Z
X	H	X	Z

H : HIGH LEVEL
L : LOW LEVEL
X : IMMATERIAL
Z : HIGH IMPEDANCE

IC7A12
SN74LVTH574PWR

IC7A13
SN74LVTH541PWR
/PI74LPT541ALX

IC7A02
TSB42AA4PDT
(ceLynx)

IC7A01
TSB41AB2PAP

IC7A09
TC7WH04FK

IC7A07
TC7WH74FK

IC7A10
TC7SZ126FU

IC7A06
TC7SZ126FU

TO D-VHS(2/3)

TO 1394(2/2)

TO D-VHS(1/3)

NOTE:
All registors are 1/16W 1608 unless otherwise specified.
All C-CHIP are 1608 unless otherwise specified.

IC7A12 SN74LVTH574PWR

FUNCTION TABLE (each flip-flop)

INPUTS			OUTPUT
$\overline{OE}$	CLK	D	Q
L	↑	H	H
L	↑	L	L
L	H or L	X	Q_0
H	X	X	Z

H : HIGH LEVEL
L : LOW LEVEL
X : IMMATERIAL
Z : HIGH IMPEDANCE
↑ : LOW-to-HIGH TRANSITION
Q_0 : PREVIOUS STATUS IS OUTPUT

IC7A13 SN74LVTH541PWR

FUNCTION TABLE

INPUT			OUTPUT
$\overline{OE1}$	$\overline{OE2}$	A	Y
L	L	L	L
L	L	H	H
H	X	X	Z
X	H	X	Z

H : HIGH LEVEL
L : LOW LEVEL
X : IMMATERIAL
Z : HIGH IMPEDANCE

IC7A07 TC7WH74FK

TRUTH TABLE

INPUT				OUTPUT		FUNCTION
$\overline{CLR}$	$\overline{PR}$	D	CK	Q	$\overline{Q}$	
L	H	X	X	L	H	CLEAR
H	L	X	X	H	L	PRISET
L	L	X	X	H	H	-
H	H	L	↑	L	H	-
H	H	H	↑	H	L	-
H	H	X	↓	Qn	$\overline{Qn}$	Don't Care

X : Immaterial

IC7A06,IC7A10 TC7SZ126FU

TRUTH TABLE

INPUT		OUTPUT
A	G	Y
X	L	Z
L	H	L
H	H	H

X : IMMATERIAL
Z : HIGH IMPEDANCE

TO 1394(1/2)

CON7A03

IC7A05
XCF5206EFT40

IC7A03
HSPS1V1816SF-60TS-K/M11L16161A-45T

IC7A04
A42L1V4096A-70TC/MT28F400B3WG-9B/MBM29LV400BC-90PFTN

Not Employed
J7A05
179160-2

X7A02
40MHZ

TPNABE

L-RXD
L-TXD

STBY3.3

A[9..1]
D[31..16]

CS2
R/W
W/R
L-RST

DRLED
CS1
R/W
TA
L_RST
LINK_INT
W/R

CAS0
CAS1

TO 1394(1/2)
TO 1394(1/2)
TO 1394(1/2)

IC7004
29LV400BA-HSB

IC5001
HD6417708SF60
SH3
RISC CONTROLLER

IC5003
K4S161622D-TC60
SDRAM

IC5004
K4S161622D-TC60
SDRAM

IC5010
SN74LVC02APWR

IC5005
SN74LVTH574PWR

IC5006
TC7W53FU

IC5005 SN74LVTH574PWR

FUNCTION TABLE
(each flip-flop)

INPUTS			OUTPUT
OE	CLK	D	Q
L	↑	H	H
L	↑	L	L
L	H or L	X	Qo
H	X	X	Z

H : HIGH LEVEL
L : LOW LEVEL
X : IMMATERIAL
Z : HIGH IMPEDANCE
↑ : LOW-to-HIGH TRANSITION
Qo : PREVIOUS STATUS IS OUTPUT

NOTE:
All registors are 1/16W unless otherwise specified.
All NPN transistors are 2SC2412K-R S/2SD601AI-R S unless otherwise specified.
All PNP transistors are 2SA1037AK-R S unless otherwise specified.

TO D-VHS(2/3)
TO D-VHS(3/3)
TO 1394(1/2)

PCB-HEAD AMP [HK]

IC3809 TLC2932IPW

IC3810 TLC2932IPW

64M SDRAM

IC3802 K4S641632F-TC60

IC3803 73C099AFD-HSB

D-VHS LSI

IC3818 SI-3033LSA-TL

IC3819 NJU7018M(TE1)

X3811 VG-4030JA DVK 27.0000MHZ

IC3814 TC7WH04FK

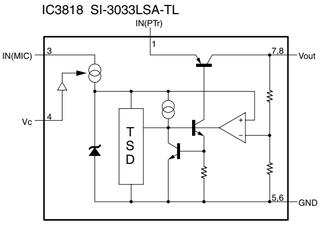
X3801 19.138MHz

X3802 27MHz

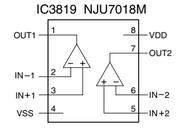
TO 1394(1/2)

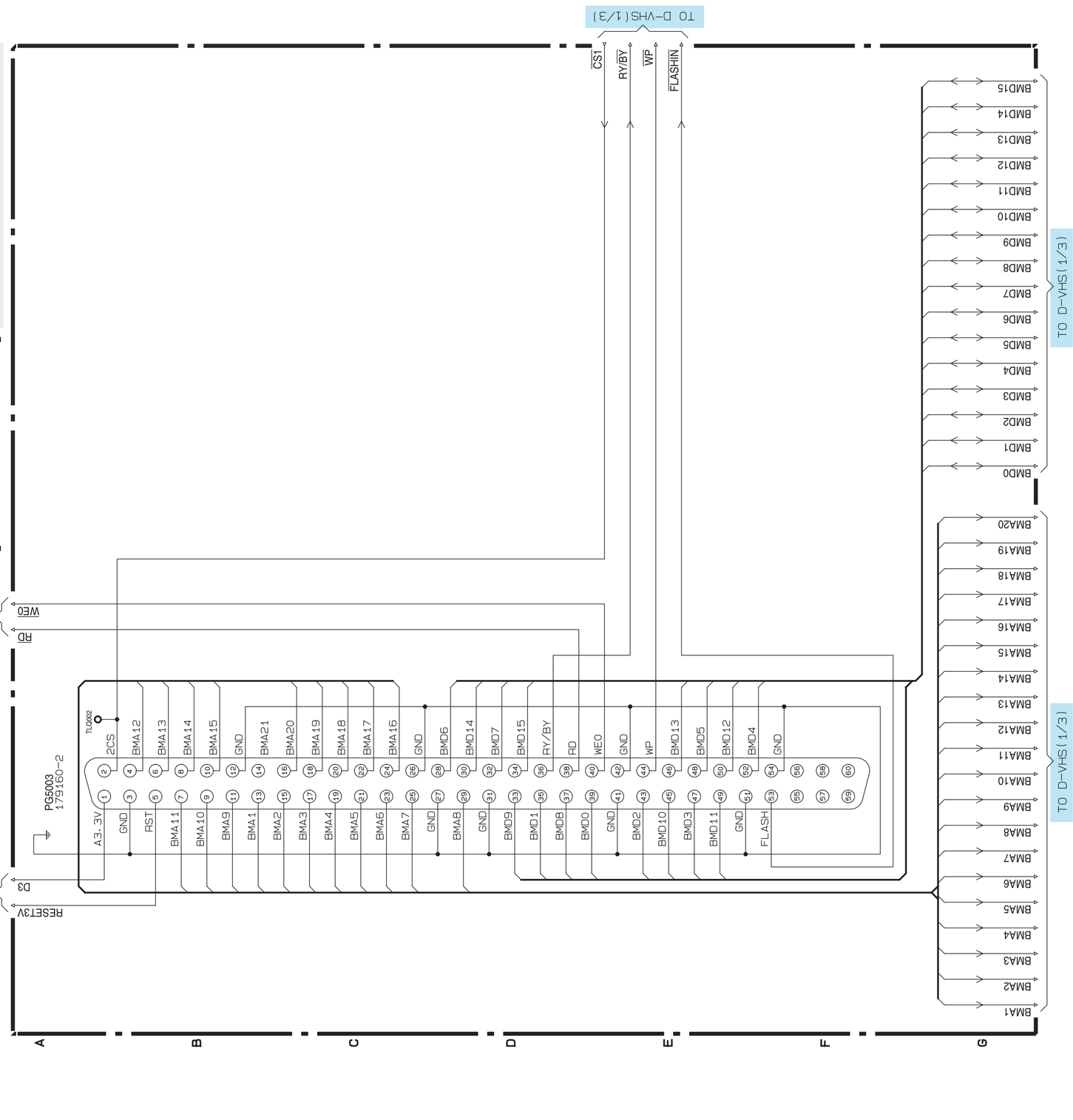
TO D-VHS(1/3)

IC3818 SI-3033LSA-TL

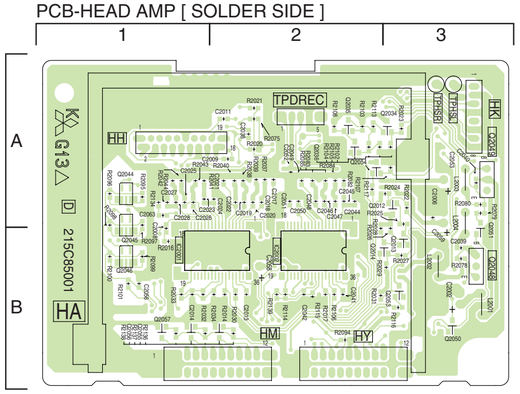


IC3819 NJU7018M




[D-VHS(3/3)] PCB-1394/D-VHS
TO D-VHS(1/3)
TO D-VHS(1/3)
TO D-VHS(1/3)
TO D-VHS(1/3)
TO D-VHS(1/3)
D3
RESET3V
WE0
RD
PG5003
179160-2
TL0002
A3.3V
2CS
GND
RST
BMA11
BMA10
BMA9
BMA1
BMA2
BMA3
BMA4
BMA5
BMA6
BMA7
BMA8
BMA12
BMA13
BMA14
BMA15
BMA21
BMA20
BMA19
BMA18
BMA17
BMA16
BMD6
BMD14
BMD7
BMD15
RY/BY
RD
WE0
WP
BMD13
BMD5
BMD12
BMD4
FLASH
BMD9
BMD8
BMD7
BMD6
BMD5
BMD4
BMD3
BMD2
BMD1
BMD0
BMA20
BMA19
BMA18
BMA17
BMA16
BMA15
BMA14
BMA13
BMA12
BMA11
BMA10
BMA9
BMA8
BMA7
BMA6
BMA5
BMA4
BMA3
BMA2
BMA1
CS1
RY/BY
WP
FLASHIN
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11

PCB-HEAD AMP [SOLDER SIDE]



PCB-HEAD AMP [SOLDER SIDE]

SYMBOL NO.	ADDRESS
C2002	B – 3
C2006	A – 3
C2008	B – 1
C2009	A – 2
C2011	A – 2
C2013	B – 2
C2014	B – 1
C2017	A – 2
C2018	A – 2
C2019	A – 2
C2020	A – 2
C2021	A – 2
C2022	A – 2
C2023	A – 1
C2024	A – 1
C2025	A – 1
C2026	A – 1
C2027	A – 1
C2028	A – 1
C2038	A – 2
C2039	B – 3
C2040	A – 3
C2041	B – 2
C2042	B – 2
C2044	A – 2
C2045	A – 2
C2046	A – 2
C2047	A – 2
C2048	A – 2
C2049	A – 2

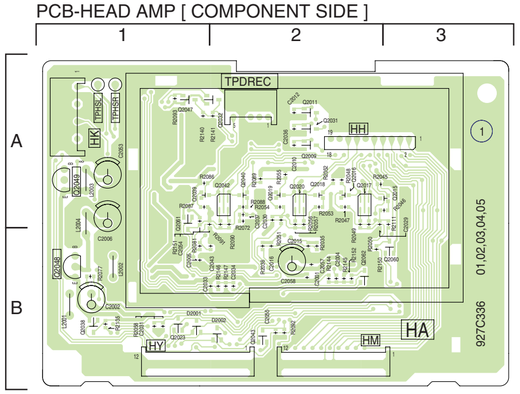
SYMBOL NO.	ADDRESS
C2050	A – 2
C2051	A – 2
C2052	A – 2
C2053	A – 3
C2056	B – 1
C2058	B – 2
C2059	A – 3
C2063	A – 1
HH	A – 1
HK	A – 3
HM	B – 1
HY	B – 2
IC2001	B – 2
IC2002	B – 2
L2001	B – 3
L2002	B – 3
L2003	A – 3
L2004	B – 3
Q2012	A – 3
Q2013	B – 3
Q2014	B – 2
Q2034	A – 2
Q2035	A – 2
Q2036	A – 2
Q2044	A – 1
Q2045	A – 1

SYMBOL NO.	ADDRESS
Q2046	B – 1
Q2048	B – 3
Q2049	A – 3
Q2050	B – 3
Q2051	B – 3
Q2053	B – 3
Q2054	A – 2
Q2055	B – 2
Q2056	B – 1
Q2057	B – 1
R2014	B – 2
R2016	B – 1
R2017	B – 2
R2020	A – 2
R2021	A – 2
R2022	A – 3
R2023	A – 3
R2024	A – 2
R2025	A – 3
R2026	B – 3
R2027	B – 3
R2028	B – 2
R2029	B – 2
R2030	B – 2
R2031	B – 2
R2032	B – 1
R2033	B – 1
R2034	B – 1
R2037	A – 2

SYMBOL NO.	ADDRESS
R2038	A – 2
R2039	A – 2
R2040	A – 2
R2041	A – 1
R2042	A – 1
R2043	A – 1
R2044	A – 1
R2075	A – 2
R2078	B – 3
R2079	A – 3
R2080	A – 3
R2082	A – 2
R2083	A – 2
R2084	A – 2
R2085	A – 2
R2094	B – 2
R2095	A – 1
R2096	A – 1
R2097	A – 1
R2098	A – 1
R2099	B – 1
R2100	B – 1
R2101	B – 1
R2102	A – 3
R2103	A – 2
R2104	A – 2
R2105	A – 2
R2106	B – 2
R2107	A – 3
R2108	A – 2

SYMBOL NO.	ADDRESS
R2113	A – 2
R2114	B – 2
R2115	B – 2
R2116	B – 3
R2117	A – 2
R2134	A – 1
R2136	B – 2
R2137	B – 1
R2138	B – 1
R2139	B – 2
TPDREC	A – 2
TPHSL	A – 3
TPHSR	A – 3

PCB-HEAD AMP [COMPONENT SIDE]



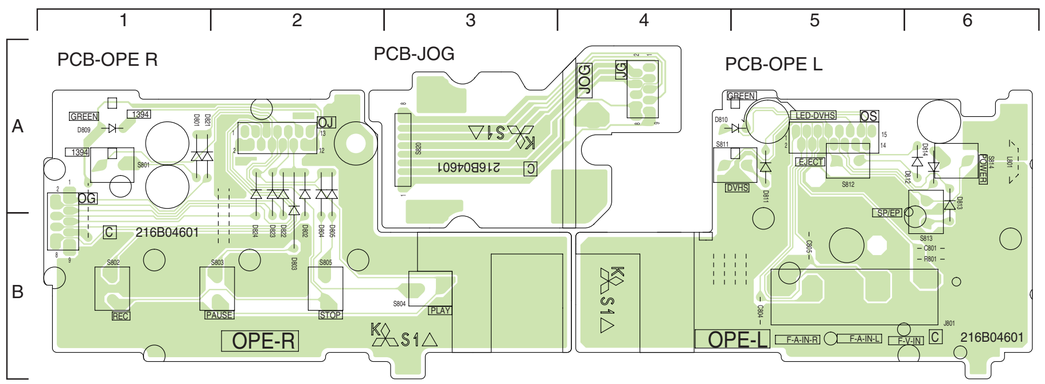
PCB-HEAD AMP [COMPONENT SIDE]

SYMBOL NO.	ADDRESS
C2001	B – 2
C2002	B – 1
C2004	B – 2
C2005	B – 1
C2006	A – 1
C2010	A – 2
C2012	A – 2
C2015	B – 2
C2016	B – 2
C2029	A – 2
C2030	A – 2
C2031	B – 1
C2033	B – 1
C2034	B – 2
C2036	A – 2
C2037	A – 2
C2043	B – 1
C2053	A – 1
C2054	A – 1
C2055	B – 2
C2057	B – 2
C2058	B – 2
D2001	B – 1
D2002	B – 2
HH	A – 3
HK	A – 1
HM	B – 2
HY	B – 2

SYMBOL NO.	ADDRESS
L2001	B – 1
L2002	B – 1
L2003	A – 1
L2004	B – 1
Q2009	A – 2
Q2011	A – 2
Q2015	A – 2
Q2016	A – 2
Q2017	A – 2
Q2018	A – 2
Q2019	A – 2
Q2020	A – 2
Q2023	B – 1
Q2031	A – 2
Q2032	A – 1
Q2038	B – 1
Q2039	A – 1
Q2040	A – 2
Q2042	A – 2
Q2043	B – 2
Q2047	A – 1
Q2048	B – 1
Q2049	A – 1
Q2060	B – 3
Q2061	A – 1
Q2062	B – 2
R2035	B – 2

SYMBOL NO.	ADDRESS
R2036	B – 2
R2045	A – 2
R2046	A – 2
R2047	A – 2
R2048	A – 2
R2049	A – 2
R2050	A – 2
R2051	A – 2
R2052	A – 2
R2053	A – 2
R2054	A – 2
R2055	A – 2
R2056	A – 2
R2057	A – 2
R2058	B – 1
R2072	A – 2
R2077	B – 1
R2081	B – 1
R2086	A – 1
R2087	A – 1
R2088	A – 2
R2089	A – 2
R2090	A – 2
R2091	A – 2
R2092	B – 2
R2093	A – 1
R2111	A – 3
R2135	B – 1
R2140	A – 1
R2141	A – 1

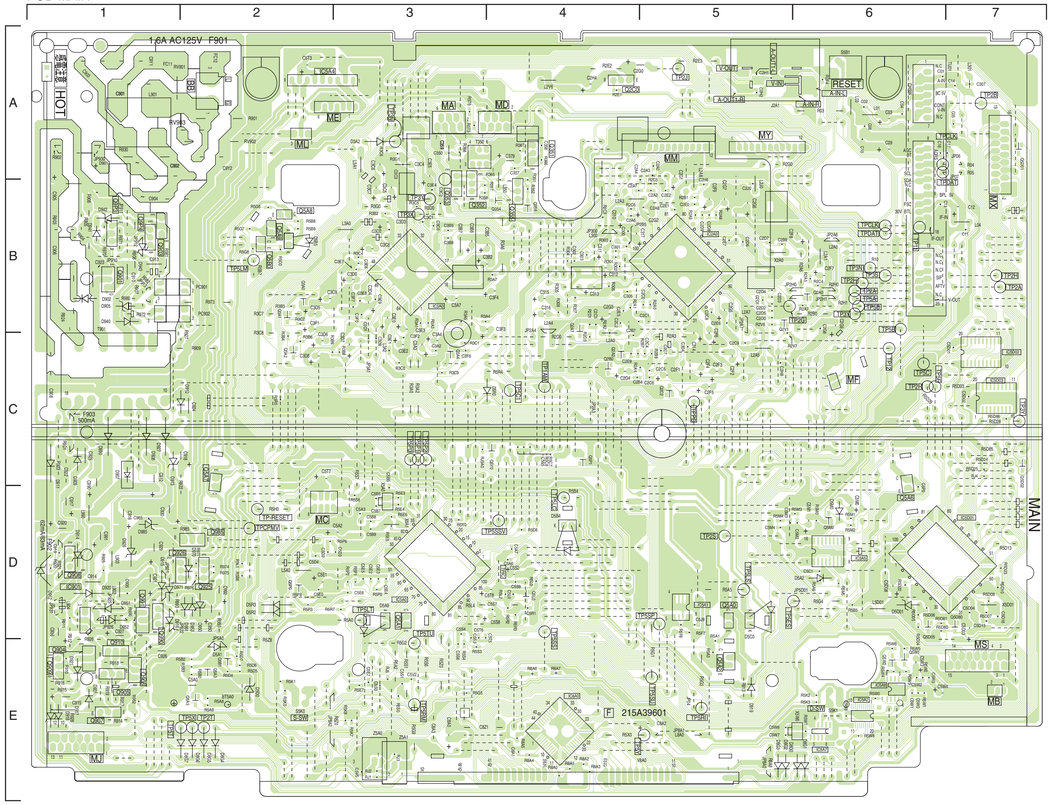
SYMBOL NO.	ADDRESS
R2144	B – 2
R2145	B – 2
R2146	B – 2
R2147	B – 2
R2150	B – 2
R2151	A – 1
R2152	B – 2
TPDREC	A – 2
TPHSL	A – 1
TPHSR	A – 1



SYMBOL NO.	ADDRESS
C801	B – 6
C804	B – 5
C805	B – 5
D801	A – 1
D802	A – 2
D803	A – 2
D804	A – 2
D805	A – 2
D809	A – 1
D810	A – 5
D811	A – 5
D812	A – 6
D813	A – 6
D814	A – 6
D821	A – 2
D822	A – 2
D823	A – 2
D824	A – 2
J801	B – 5
JG	A – 4
L801	A – 6
OG	A – 1
OJ	A – 2
OS	A – 5

SYMBOL NO.	ADDRESS
R801	B – 6
S801	A – 1
S802	B – 1
S803	B – 2
S804	B – 3
S805	B – 2
S811	A – 5
S812	A – 5
S813	B – 6
S814	A – 6
S820	A – 3

PCB-MAIN



PCB-MAIN

SYMBOL NO.	ADDRESS
BB	A – 2
BT5A0	E – 2
C01	A – 6
C02	A – 6
C03	A – 6
C04	A – 6
C05	A – 7
C08	A – 6
C09	A – 6
C10	A – 6
C11	B – 7
C12	B – 7
C13	B – 6
C14	A – 7
C17	A – 7
C18	A – 6
C2A0	A – 5
C2A2	B – 5
C2A3	A – 5
C2A4	B – 5
C2A6	B – 4
C2A7	B – 4
C2A8	B – 5
C2B4	C – 4
C2B7	C – 4
C2B9	B – 5
C2C0	B – 5
C2C1	B – 4
C2C2	B – 4
C2C3	B – 4
C2C4	C – 5
C2C5	C – 5
C2C6	C – 5
C2C7	C – 5
C2C8	B – 5
C2C9	C – 5
C2D0	B – 5
C2D1	B – 5
C2D2	B – 5
C2D3	B – 5
C2D4	B – 5
C2D5	B – 5
C2D6	B – 5
C2D7	B – 5
C2D8	B – 5
C2D9	B – 5
C2E0	B – 5
C2E1	B – 5
C2E2	B – 5
C2E5	B – 4
C2E6	B – 5
C2E7	B – 5
C2E9	C – 4
C2F1	C – 5
C2F2	C – 5
C2F3	C – 5
C2F4	C – 5
C2F5	C – 5
C2F6	C – 5
C2F7	B – 6
C2F8	B – 6
C2G0	A – 4
C2G1	B – 5
C2G2	B – 5
C2G3	B – 4
C2G4	C – 4
C2G5	B – 5
C2G6	B – 5
C2G7	B – 5
C2G8	B – 6
C2G9	B – 6
C2H1	A – 5
C2H2	A – 5
C2H4	A – 4
C2H6	B – 5
C2H8	C – 5
C2J0	B – 5
C2J0	B – 4
C301	B – 4
C302	B – 4
C303	B – 4
C304	C – 5
C305	B – 4
C307	A – 7
C310	B – 4
C311	B – 4
C312	B – 4
C313	B – 4
C314	C – 5
C315	B – 4
C316	B – 4
C317	B – 4
C350	A – 3
C357	A – 4
C358	A – 4
C359	A – 3
C359	A – 3
C379	A – 4
C3A2	C – 3
C3A3	C – 3
C3A4	C – 3
C3A7	B – 3
C3B2	B – 3
C3B5	B – 4
C3B6	B – 3
C3B7	B – 3
C3B8	B – 3
C3B9	B – 3
C3C0	B – 3
C3C1	B – 3
C3C2	B – 3
C3C3	A – 3
C3C4	A – 3
C3C5	B – 3
C3C6	A – 3
C3C7	B – 3
C3C8	B – 3
C3C9	B – 2
C3D0	B – 3
C3D1	C – 3
C3D2	B – 3
C3D3	B – 3
C3D4	B – 3
C3D5	B – 2
C3D6	C – 2
C3D7	C – 3
C3D8	C – 2
C3D9	C – 3
C3E0	B – 3
C3E1	C – 3
C3E2	C – 3
C3E3	B – 3
C3E4	B – 3
C3E5	B – 3
C3E6	B – 3
C3E7	B – 3
C3E8	B – 3
C3E9	B – 3
C3F0	B – 3
C3F1	B – 2
C3F2	C – 3
C3F3	B – 3
C3F4	B – 4
C3F6	C – 3
C3F7	B – 3
C5A0	E – 2
C5A2	D – 3
C5A3	D – 3
C5A6	D – 4
C5A7	D – 4
C5B5	D – 3
C5B6	D – 3
C5B7	D – 3
C5B8	D – 3
C5B9	D – 3
C5C1	D – 6
C5D01	C – 7
C5D02	C – 7
C5D03	D – 7
C5D04	D – 7
C5D08	D – 6
C5D15	D – 7
C5D16	D – 7
C5D2	D – 2
C5D2	D – 3
C5D3	D – 3
C5D4	D – 2
C5E0	D – 2
C5E1	D – 2
C5E2	D – 3
C5E3	D – 3
C5E4	D – 3
C5E5	D – 3
C5E6	D – 3
C5E7	E – 3
C5J9	D – 5
C5L0	D – 4
C5M0	D – 6
C5M1	D – 6
C5M2	D – 6
C5M3	D – 5
C5M4	D – 5
C5P0	D – 6
C5R1	D – 4
C5S0	E – 3
C5S1	E – 3
C5S2	D – 4
C5S3	D – 3
C5S4	D – 3
C5S5	C – 4
C5S6	E – 3
C5S7	D – 4
C5S8	D – 4
C5S9	D – 4
C5T3	A – 2
C5T5	D – 3
C5T6	D – 3
C5T7	C – 2
C5T8	D – 4
C5V2	E – 3
C5V5	E – 3
C5W0	E – 6
C5W1	E – 6
C5W2	E – 6
C5W3	E – 6
C5W4	E – 6
C5W5	E – 6
C5W6	E – 5
C5W7	E – 5
C5W8	E – 6
C8A0	E – 3
C8A1	E – 4
C8A2	E – 5
C8A3	E – 3
C8Z1	E – 4
C901	A – 1
C901	A – 1
C902	A – 2
C902	A – 1
C903	A – 1
C904	B – 2
C905	B – 1
C906	B – 1
C908	C – 1
C910	B – 1
C912	D – 1
C913	B – 1
C914	D – 1
C915	E – 1
C916	D – 1
C917	D – 1
C918	C – 2
C919	D – 1
C920	D – 1
C921	D – 1
C922	C – 1
C923	B – 1
C924	C – 2
C925	C – 1
C926	E – 1
C927	D – 1
C929	D – 1
C930	D – 1
C935	D – 1
C936	E – 1
C950	D – 2
C985	D – 1
C990	D – 1
C991	D – 1
C992	D – 2
C9Y1	A – 1
C9Y2	A – 2
D3A2	A – 3
D5A1	E – 2
D5A2	D – 6
D5A9	D – 3
D5B4	D – 4
D5B5	B – 2
D5C0	D – 5
D5D0	E – 2
D5D01	D – 6
D5M0	D – 6
D5R0	C – 4
D5R2	D – 2
D5R3	D – 2
D8G0	E – 6
D8G1	E – 6
D8G2	E – 5
D8G3	E – 5
D8G4	E – 2
D8G5	E – 2
D8G6	E – 2
D8G7	E – 2
D901	B – 1
D902	B – 1
D905	B – 1
D907	C – 1
D908	C – 1
D909	C – 1
D910	C – 2
D911	C – 1
D912	D – 1
D913	C – 1
D914	D – 1
D915	D – 1
D916	D – 1
D917	E – 1
D918	E – 1
D919	E – 5
D920	D – 1
D921	E – 1
D926	D – 1
D927	C – 1
D931	E – 1
D940	B – 1
D941	B – 1
D942	B – 1
D943	B – 1
D950	D – 2
D951	D – 1
D952	D – 1
D953	D – 2
D970	D – 2
D971	D – 1
D985	D – 1
D990	C – 1
D991	D – 2
F902	D – 1
F903	C – 1
FC11	A – 1
FC12	A – 2
IC2A0	B – 5
IC3A0	B – 3
IC5A0	D – 3
IC5A1	D – 5
IC5A2	E – 6
IC5A4	A – 3
IC5A5	D – 6
IC5A7	E – 6
IC5A8	E – 6
IC5D01	D – 6
IC5D02	C – 7
IC5D03	C – 7
IC8A0	E – 4
IC901	D – 1
J2A1	A – 5
JP04	E – 5
JP06	A – 6
JP07	A – 6
JP2A3	C – 4
JP2A4	B – 4
JP2A6	B – 6
JP2A7	B – 5
JP2B5	B – 4
JP2H0	B – 5
JP2H1	B – 5
JP300	B – 4
JP3A1	C – 3
JP5A0	E – 2
JP5D01	D – 6
JP8A0	E – 5
JP8A1	E – 5
JP8A2	E – 3
JP910	B – 1
JP911	B – 1
JP912	B – 1
JP913	B – 1
JP921	D – 1
JP922	D – 1
JP925	D – 1
JP926	D – 1
JP930	A – 1
JP931	D – 1
L01	A – 6
L03	A – 6
L04	B – 7
L2A0	C – 4
L2A1	B – 6
L2A3	B – 5
L2A4	B – 4
L2A5	C – 5
L2A6	B – 6
L2A7	C – 5
L2A8	B – 5
L2J0	B – 5
L2V6	A – 4
L300	B – 4
L301	A – 7
L350	B – 4
L3A0	B – 3
L3A1	A – 3
L3A2	C – 3
L5A0	D – 2
L5D01	D – 6
L8A0	E – 5
L901	A – 1
L902	D – 1
L903	D – 1
L904	D – 1
L990	D – 1
MA	A – 3
MB	E – 7
MC	D – 2
MD	A – 4
ME	A – 3
MF	C – 6
MJ	A – 2
ML	A – 2
MM	A – 4
MS	E – 7
MX	B – 7
MY	A – 5
PC901	B – 2
PC902	B – 2
Q2A0	B – 6
Q2A2	C – 4
Q2A7	B – 4
Q2B0	C – 4
Q2C0	A – 4
Q2C2	C – 5
Q2V1	B – 5
Q351	A – 4
Q352	A – 3
Q353	A – 3
Q354	B – 4
Q355	B – 4
Q356	B – 4
Q3A0	B – 2
Q3A1	B – 2
Q3A2	C – 2
Q3A4	C – 3
Q5A0	D – 5
Q5A2	E – 5
Q5A3	E – 2
Q5A4	B – 4
Q5A5	E – 2
Q5A6	C – 6
Q5A7	C – 2
Q5A8	B – 2
Q5A9	B – 2
Q5B0	B – 2
Q5B1	E – 2
Q5D01	A – 7
Q5D02	C – 7
Q5D05	D – 6
Q5D80	D – 7
Q5L0	D – 4
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Q5Y0	C – 4
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Q990	E – 1
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Q9P4	B – 1
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R05	A – 7
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R7D03	B – 5
R7D04	B – 6
R7D05	B – 6
R7D06	B – 6
R7D07	B – 6
R901	A – 1
R902	A – 2
R903	B – 1
R904	B – 1
R905	B – 1
R906	B – 1
R907	B – 1
R908	B – 1
R909	C – 2
R910	E – 1
R911	D – 1
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R921	D – 1
R922	D – 2
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R925	D – 1
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R927	C – 2
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R972	B – 1
R973	B – 2
R974	D – 2
R975	D – 2
R976	D – 2
R977	D – 2
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R982	B – 1
R985	D – 2
R990	D – 1
R993	D – 1
R9D1	C – 1
R9L1	D – 2
RJ1	E – 3
RJ2	E – 3
RJ3	E – 3
RJ4	C – 7
RJ5	E – 3
RJ5A0	C – 3
RV901	A – 1
RV902	A – 2
RV903	A – 2
T901	C – 1
TP-RESET	D – 2
TP11	B – 6
TP12	C – 6
TP1AM	C – 4
TP2A	B – 6
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TP2G	B – 5
TP2H	B – 6
TP2J	A – 5
TP2S	D – 5
TP2T	E – 2
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TP3S	B – 6
TP3X	B – 3
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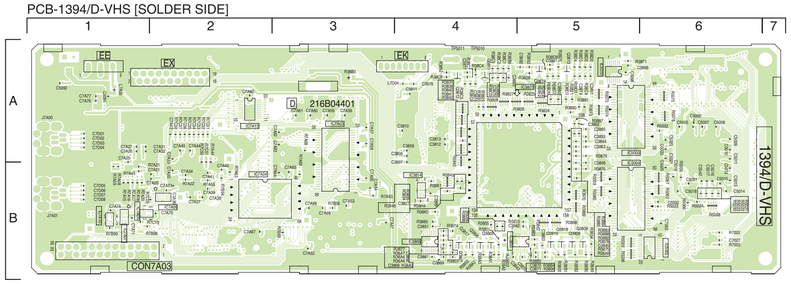
TP4C	D – 4
TP5A	B – 6
TP5B	B – 6
TP5C	C – 6
TP5C1	C – 4
TP5ES	D – 6
TP5F	C – 6
TP5LC	D – 4
TP5LM	B – 2
TP5LS	D – 5
TP5LT	D – 3
TP5P0	C – 3
TP5P1	C – 3
TP5P2	C – 3
TP5RI	E – 5
TP5RM	E – 3
TP5SP	D – 5
TP5SS	D – 4
TP5SSV	D – 4
TP5SU	E – 5
TP5T	E – 2
TP5TU	E – 3
TP5X	E – 2
TP5Y	E – 5
TPCLK	B – 6
TPCPMV	D – 2
TPDAT	B – 6
TPPB	C – 5
TU01	A – 6
V8A0	E – 5
X2A0	B – 5
X5A0	D – 3
X5A1	D – 3
X5D01	D – 7
X5W0	E – 6
Z5A0	E – 3
Z5A1	E – 3

PCB-1394/D-VHS [SOLDER SIDE]



PCB-1394/D-VHS [SOLDER SIDE]

SYMBOL NO.	ADDRESS
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C3808	A – 4
C3809	A – 4
C3810	A – 4
C3811	A – 4
C3812	A – 4
C3813	A – 4
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C3846	B – 5
C3851	B – 4
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C3865	A – 5
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C5023	A – 6
C5042	B – 6
C5051	B – 6
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C5092	A – 1
C5098	A – 5
C7003	B – 6
C7027	B – 6
C7A20	B – 2
C7A21	B – 2
C7A25	B – 1
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C7A27	A – 1
C7A31	A – 1
C7A32	A – 1
C7A33	A – 2
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C7D05	B – 1
C7D06	B – 1
C7D07	B – 1
C7D08	B – 1
CON7A03	B – 2
EE	A – 1
EK	A – 3
EX	A – 1
IC3803	B – 5
IC3809	B – 4
IC3810	B – 5
IC3814	B – 4
IC5003	A – 5
IC5004	B – 5
IC5005	B – 6
IC5010	A – 5
IC7A03	A – 3
IC7A04	B – 2
IC7A06	B – 1
IC7A07	B – 1
IC7A09	B – 2
IC7A10	B – 1
IC7A13	A – 2
J7A00	A – 1
J7A01	B – 1
L7A35	A – 1
L7D04	A – 4
Q3805	B – 4
Q3806	B – 4
Q3807	B – 4
Q3808	B – 5
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